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After nearly half a century, the animal damage control (ADC) function of the U.S. Fish and Wildlife Service is to return to the Department of Agriculture. The transfer is expected to involve some 380 FTE's and approximately $20 million. To many, the program meant coyote control as depicted above. However, the professional biologists involved in ADC also handled bird and aircraft conflicts at airports, nuisance wildlife complaints from homeowners, and participated in a number of migratory bird surveys. *See story page 3.*

Secretary Hodel on "Take Pride" Initiative

Editor's Note:
The following article was excerpted from the remarks of Secretary of the Interior Don Hodel to Departmental employees concerning the "Take Pride" initiative during a general meeting held in Washington, D.C., on January 13, 1986.

Last spring at a hearing I was asked how we could protect public lands from people stealing things from them and the like. In this particular instance it was a couple of large petrified logs that had been stolen from a petrified forest. The answer I gave the senator was there was no way we could protect 700 million acres of America if a quarter of a billion people—240 million Americans—didn't care.

The answer was honest and it was right, but it wasn't satisfactory. We then began to focus on this matter of caring. We concluded, of course, that most people do care. But there is an increasing number of people, it would seem from our experience, who either don't care or don't understand what the consequences are of their activity.

So we are going forth with a public awareness campaign urging Americans to take pride in this land and to recognize that those federal and state and local lands that they have—not just parks, but wilderness areas and multiple use lands, campgrounds, wild and scenic rivers, and other open areas owned by the public—are their lands and they need to take pride in how they behave on them.

Recreation is extremely important to the people in this society. The word

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recreation has come to mean fun to many people. In fact, think about the root. The root is re-creation. I truly believe that getting outdoors, doing something of interest to you and your family, is the kind of thing that regenerates us. And as a society we are better off when people have the opportunity to get out and take a look at the world and change their perspectives, perhaps, and come back to work with a new freshness and enthusiasm that helps carry the society along.

What we seek is not a big federal program. In the era of Gramm-Rudman, we're simply not going to have large sums of money to throw at a problem anyway. More importantly, I don't think money does very much about attitude adjustment. What I would hope we do is provide an umbrella effort to help others understand the importance of how they treat the lands. How we treat the lands today will determine how the lands treat us in the future.

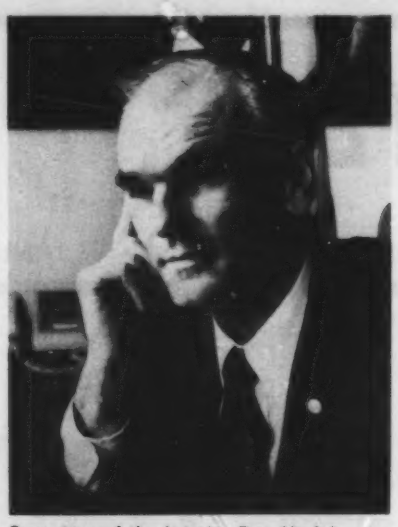
A couple of generations ago we were an agrarian society. Either we came from a farm or we had parents who had come from a farm or had relatives on the farm, and I think we understood the saying that "as ye sow, so shall ye reap."

Today, we are a very urbanized society. In fact, if you want to know how urbanized, ask a kindergarten class from the city where milk comes from. The answers are terrific. But they also show that we are no longer an agrarian society.

Perhaps the time has come to get across some of the virtues that are essential to know with regard to land. The Advertising Council, Inc., has agreed to participate. They, of course, have had some successful programs in the past such as the "Smokey the Bear" and "Keep America Beautiful" campaigns.

What are we hoping will take place? We're *hoping* that civic organizations, municipalities, schools, churches, church youth groups, and others will undertake some activity which is geared toward this kind of effort. For instance, adopt-a-park, adopt-a-trail, clean-up activities which are not uncommon in many localities.

For example, the American Camping Association has 2,500 members and nine million young people a year go to camp. Until we began talking about this program with them, they had not put together a national curriculum for camping etiquette or



Secretary of the Interior Don Hodel

camping ethics. I feel that if nothing more than reaching these nine million young people a year with this kind of message takes place, the whole effort will have been worthwhile.

I want to emphasize I do not see this primarily as a budget effort. I'm not trying to cut the expenditures we have as a department for our activities in the field. There are certain kinds of damages that can be fixed with dollars—abusive use of a trail, damage to sign posts or buildings at a facility, vandalism, graffiti, and the like. But there are some things that happen that cannot be repaired.

Our estimates are that 80 to 90 percent of the archeological sites in the American Southwest have been damaged to some extent. A very severe toll has been taken of the historical record. We cannot go back with any amount of money imaginable and correct that damage. We need people to understand that that historical record belongs to all of us and is part of the pride we ought to take in our society.

I am hopeful that our employees all over the country and here in Washington, as well, will be sufficiently well prepared so that as the opportunity arises, as part of our normal jobs to give speeches or talks, to participate in meetings, or to talk to people, we can pass the message along.

What we have a chance to do, I believe, through this kind of an effort, is to make the point that you and I all know very well we are members of these communities in which we live and work, just as other citizens. And that we want nice, clean, good, enjoyable places to re-create as do our fellow citizens.

I think that if we work together in this effort and if it's as successful as the early indications are that it will be, it will be one of the more fun things that we've had to do together.

TAKE PRIDE *in America*

Photo Contest Goes Biennial

Each year for the past 10 years the U.S. Fish and Wildlife Service has sponsored a photography contest for its employees. During this time the numerous excellent photographs taken by Service employees and volunteers have been used in a diverse and far reaching collection of Service publications and audio-visual presentations, as well as in magazines, books, and other products produced by various outside media and publishers. The photos have been an invaluable aid in depicting the story of the Service and its various wildlife management activities.

Unfortunately, recent budgetary considerations and regional and Washington Office staff time constraints have necessitated changing the photography contest to a biennial event. Therefore the next competition will be held starting in the spring of 1987 and every other year thereafter.

According to Nan Rollison, photo contest coordinator in the Washington Office, "I hope this change will not dampen the enthusiasm of the dedicated photographers within the ranks of the Service. What I expect is just a bigger and better contest in 1987."

Monitor Honors LE Agents

Former Attorney General William French Smith had some discouraging words for would-be poachers of wildlife and those who trade in protected species as he handed out this year's awards from Monitor, a Washington based consortium of conservation and environmental organizations. Especially since the Service's Law Enforcement Division was well represented among the various recipients.

Monitor serves as a clearinghouse for information and is interested in the conservation of protected species and marine mammals. It was formed in the early 1970's when several groups joined together in Washington to push for passage of the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

This year's awards were sculptures of eagles designed by John Perry, creator of the internationally famous flying whale "Flo", and were awarded by Smith at ceremonies held in Washington, D.C.

Recipients of the award included:

• Steven Hamilton, Special Agent, for his work exposing illegal activity in large bass tournaments. Trophy-size black bass were being purchased in Florida and taken to Texas where they were placed in the live well of a contestant's boat and the pretense was made that they had been caught legally.

• John Gavitt, Special Agent in Charge—Branch of Special Operations, for a 3-year sting operation during which he posed as a taxidermist in the area of Yellowstone National Park.

• Rick Leach, former Special Agent in Charge—Branch of Special Operations, for leading undercover investigations resulting in 125 successful prosecutions and over $550 thousand in fines.

• Don Schmidt, Special Agent, and Jeff McPartlin, a concerned falconer, for their role in "Operation Falcon" that resulted in convictions against approximately 55 individuals and fines of over $300 thousand.

• Chris Nuechterlein, an attorney with the Department of Justice in Washington, D.C., for his outstanding work in prosecuting the cases resulting from "Operation Falcon."

ADC Returns to Agriculture

After nearly 45 years, the animal damage control function of the U.S. Fish and Wildlife Service will return to the Department of Agriculture. The move, to be completed by April 1, came about as a result of a provision placed in the continuing resolution budget passed by Congress shortly before it adjourned for the holidays. The program is to become part of Agriculture's Animal and Plant Health Inspection Service (APHIS).

The idea of such a transfer is not new. It has been advanced off and on since the early 1970's. However, during the last session of Congress the proposed action found its way into three separate pieces of legislation. They were the 1985 farm bill, the Agriculture Department's appropriation bill, and the continuing resolution.

Conservation organizations and others opposed to the transfer succeeded in getting the measure stripped from the farm bill. However, it remained in the continuing budget legislation which included the Agriculture appropriation.

The transfer is expected to involve some 380 FTE's and approximately $20 million. A major portion of this is represented by the Service's Denver Wildlife Research Center that conducts most of the Service's research on predator and bird control methods. The center accounts for about 90 of the FTE's and $4.2 million.

Shortly after the first of the year, a transition team consisting of representatives from the Interior Department, the Service, Agriculture, and APHIS was formed to facilitate the transfer of personnel, records, property, and the like. At the present time, the team is meeting on a weekly basis in order to accomplish the massive amount of coordination and work involved with such an undertaking.

The upcoming transfer brings to an end a long—and often controversial—era. The animal damage control program meant only coyote control in the minds of many, both in and outside of the Service. However, the program encompasses a diversity of other activities, including the prevention of bird strikes at airports, nuisance complaints such as woodpeckers attacking cedar siding, and efforts to move blackbird roosts. ADC personnel also participated in other Service activities such as migratory bird surveys, banding exercises, and the like.

According to LeRoy Sowl, chief of the Wildlife Management Division, "There is a tremendous amount of very valuable professional experience and expertise involved in this transfer. I feel that these employees have represented the Service well through the years in their dealings with landowners and local communities. They will be sorely missed among the ranks of the U.S. Fish and Wildlife Service."

photo by John Gavitt-LE

Elaborate trophies by noted sculptor John Perry were presented by Monitor, Inc., to four Law Enforcement agents in recognition of their efforts on behalf of wildlife.

Ducks Unlimited Donates $1.4 Million

Ducks Unlimited, Inc. (DU), donated over $1.4 million to the Migratory Bird Conservation Fund on December 4, the largest single cash contribution ever made to the fund. The Fish and Wildlife Service will use the money to acquire waterfowl habitat for the National Wildlife Refuge System.

DU executive vice president Dale E. Whitesell presented the $1.4 million check to Interior Secretary Don Hodel in a ceremony in the Secretary's office. Secretary Hodel serves as chairman of the Migratory Bird Conservation Commission, which will oversee the expenditure of the DU money.

"DU has been a major partner of ours in the ongoing Duck Stamp campaign, and with this donation it becomes the largest cash contributor in history to the Migratory Bird Conservation Fund," said Hodel. "DU has given a tremendous boost to our effort to protect vital wetlands and waterfowl resources.

"DU's donation is a fine example of the spirit of my 'Take Pride in America' theme, through which we hope to encourage all Americans to share a greater awareness and responsibility for the wise management of the nation's public lands and waters," Hodel said.

Whitesell noted that DU's donation will continue to have an impact long after the money is spent. "It's more of an investment than a grant. The waterfowl and hundreds of other species that use wetlands will be its beneficiaries. The 600,000 members of DU are proud that we've conserved the resource for future generations."

DU members raised funds for the donation in 1984 during the 50th anniversary of the Federal Duck Stamp through the auction of 1,000 limited-edition, custom-grade 12-gauge shotguns manufactured by Sturm, Ruger, and Company, Inc. DU purchased the firearms from the Connecticut arms company for auction to DU members at the organization's annual fundraising banquets held by local chapters throughout the United States and Canada.

The over-and-under shotguns bear engravings of the 1934 and 1984 Duck Stamps and Interior Department and DU logos. The auctions raised $1,420,900 from DU members, with the largest single bid topping $7,000.

photo by Steve Stewart

Ducks Unlimited executive vice president Dale E. Whitesell (right) presents Interior Secretary Don Hodel with a check for $1.4 million for the Migratory Bird Conservation Fund.

photo courtesy Ducks Unlimited

One of 1,000 special over-and-under shotguns featuring finely detailed engravings of the 1934 and 1984 Duck Stamps, as well the Interior and Ducks Unlimited logos as is shown above. The commemorative editions were auctioned off at the annual banquets of DU chapters across the country and the proceeds donated to the Migratory Bird Conservation Fund.

In Perspective: Ducks Unlimited

DU's record donation to the Migratory Bird Conservation Fund is only the latest chapter in the story of that organization's important contribution to waterfowl conservation.

DU's status as a private organization enables it to do something the Fish and Wildlife Service has not been able to do—carry out waterfowl habitat conservation projects outside the United States.

Most of North America's waterfowl are produced in Canada. Realizing that suitable habitat held the key to the future of waterfowl, DU was organized in 1937 to restore and rehabilitate wetlands in the vast prairie provinces of Canada. Today,

'85 Record Year for Acquisition

At the outset of Fiscal Year 1985, former Fish and Wildlife Service Director Robert A. Jantzen gave the Realty Division a seemingly unattainable goal—to obligate 85 percent of the Land and Water Conservation Fund (LWCF) and 100 percent of the Migratory Bird Conservation Account (MBCA) funding for that year.

At first glance, these percentages may not seem all that unrealistic, but due to Congressional action both of the accounts were at unprecedented funding levels. The goal was indeed a challenge. The largest LWCF program in previous years was $65 million in FY 1984; available funding for FY 1985 was $109 million. On the MBCA side, a total of $36 million was available. This meant the Service's overall acquisition funding for FY 1985 stood at $145 million.

Realty Unprepared

The Realty Division found itself virtually unprepared for such an undertaking. Regional realty offices were just beginning to recover from a series of personnel reductions during 1981 and 1982.

In addition, Congress had included within the already record LWCF authorization, monies for 15 new refuges not contained in the Service's budget and another $23 million of Wetlands Loan Act funding earmarked for migratory waterfowl acquisitions. Much of the preliminary detail work involved in a realty acquisition had not been done.

Process Streamlined

Reaction to the Director's challenge was immediate. Staff was added and the regional directorates were urged to devote more attention to land acquisition. In January 1985, the Director provided specific guidelines aimed at facilitating the acquisition process. The guidelines covered such things as compliance with the National Environmental Protection Act, preparation of decision documents, land protection plans, condemnation procedures, and others. In short, virtually every phase of the land acquisition process was affected.

The end result of the challenge was obligation of twice as much funding as during any previous year; $114 million for acquisition of some 145,000 acres. This represents an average obligation rate of nearly 80 percent; 98 percent of the MBCA and 71 percent of the LWCF.

If, during the past year you wondered why there were so many empty desks in the regional realty offices, last year's land acquisition rate is the reason. The LWCF funding provided for acquisition efforts at a total of 42 refuges. Under MBCA, there were 30 additional refuges involved with land purchases, exchanges, donations, or lease arrangements. In addition, the realty staffs were busy adding another 428 waterfowl production areas. This meant realty personnel acquired an interest in land at 500 separate sites of the National Wildlife Refuge System.

Overdrive

As an example of the workload, just seven of the 72 refuges totaled over 400 separate ownerships. In all, Realty now estimates that about 1,300 ownerships were processed during the fiscal year's acquisition effort.

The land acquisition program was so successful that the challenge has again been issued for FY 1986. Perhaps this time the Realty Division can reach the previously unattainable goal, 100 percent of its current $100 million land acquisition program.

cont. from p. 4

DU has 600,000 members and raises over $45 million annually. Over the course of its history, DU has raised more than $325 million for waterfowl conservation.

But DU's contribution to waterfowl is far greater than the dollars it raises. Its 3.5 million acres in Canada triples the acres reserved for waterfowl nesting by adding to the Service's 1.7 million acres of waterfowl production areas (WPA's) in the United States. Or, to make another comparison, DU's 3.5 million acres nearly equals the 3.67 million acres—including the WPA's—that the Service has acquired for the Refuge System since 1934 under the Duck Stamp program.

More importantly, DU has been able to develop some 2 million acres of its wetlands to increase waterfowl production. Water control structures such as levees, dikes, and sluice gates have stabilized DU habitat areas from the harmful effects of flooding and drought.

These developed habitat areas become especially important during drought years, when many natural, unmanaged water areas dry up. During these dry years the birds produced on DU-managed wetlands become even more important to the maintenance of the fall flight and the breeding population for the following spring.

In recent years, DU has expanded its efforts to include wetlands preservation and development in the United States and protection of wintering habitat in Mexico. DU is cooperating with the Service, the Bureau of Land Management, USDA's Forest Service, and State wildlife agencies by funding wetlands development and restoration projects on lands owned or leased by those agencies. These activities are being carried out principally in the Dakotas, Montana, Minnesota, and Alaska, which together produce the vast majority of ducks and geese hatched in the United States. In Mexico, DU has reserved more than 50,000 acres of vital wintering habitat for ducks and geese.

DU's importance to waterfowl conservation is likely to continue to increase over the next decade, as the United States and Canada struggle to reduce the continued losses of wetlands to agriculture and urban development. "DU has endorsed the habitat strategies in the North American Waterfowl Management Plan. Its participation and that of other private organizations will be critical to the success of our efforts to implement the plan," notes Don Minnich, Deputy Associate Director for Wildlife Resources.

"The plan calls for the United States to greatly increase its efforts to help preserve waterfowl habitat in Canada. That makes sense, when you consider that Canada hatches most of the waterfowl, but the U.S. takes the majority of the harvest.

"We'll certainly be relying on DU's support and experience as we explore what the United States can do to maintain and improve waterfowl habitat in Canada."

America's waterfowl could certainly use more friends like DU.

Refuge Duck Stamp Sales Break Record

Duck Stamp sales by national wildlife refuges nearly tripled during the 1984-85 sales year, compared with the previous year. Total refuge sales for the 50th anniversary year numbered 6,951 and netted $52,132.50 to the Migratory Bird Conservation Fund. Region 5 was responsible for over half the sales, with four refuges (Forsythe, Blackwater, Chincoteague, and Prime Hook) selling over 500 stamps each. A total of 80 refuges and other Service offices participated in the sales effort.

For the first time, refuge Duck Stamp sales for non-hunting purposes nearly equaled sales for hunting. Previously, non-hunting purchases comprised a relatively small percentage of total refuge sales. Fiftieth anniversary publicity efforts, which promoted the stamps for their artistic and collector values and as a means of contributing to wetland preservation, seem to have paid off.

The Service continues to promote the refuge Duck Stamp sales effort even though the 50th anniversary year is over. To show his personal support of the program, Acting Director Eugene Hester purchased a Duck Stamp at each refuge he visited during 1985.

Photo by Virgil Martinez

A visitor to Blackwater National Wildlife Refuge is one of nearly 7,000 persons who purchased a Duck Stamp at a refuge this year.

Sixty Species Listed as Endangered in '85

Record Four Species Delisted

An increasing number of animals and plants were listed as endangered and threatened species in 1985, while a record four species were removed from the endangered and threatened species list because they have recovered to the extent that they no longer require such protection.

"Nearly one quarter of all listed U.S. endangered and threatened species were added in 1984 and 1985," notes William P. Horn, Assistant Secretary for Fish and Wildlife and Parks. "In a way that may be bad news, because listings acknowledge the declining status of animals and plants. But it's good news in the sense that we are now able to grant these species the full protection of the Endangered Species Act and take steps to help them recover."

Listing of new endangered and threatened species accelerated in 1985, with 60 more species being added. Of these species, 58 are found in the United States.

Listing is the first important step toward bringing a species back from the brink of extinction. After species are listed, recovery plans are drawn up by the Fish and Wildlife Service using the expertise of Service and non-Service biologists, conservation organizations, and State and Federal natural resource managers to identify activities needed to improve each species' status, such as research, habitat protection, increased law enforcement, improved land management practices, captive breeding, relocations, and establishment of experimental populations. There are now 185 approved recovery plans for endangered and threatened species—an increase of 26 plans over 1984.

The U.S. List of Endangered and Threatened Species now totals 883, of which 390 species occur in the United States and 493 inhabit only other countries.

Refuge Contaminants Report Issued

A preliminary survey has identified contaminant problems on 10 of the Service's 434 national wildlife refuges and indicated 74 refuges where in-depth study is required because of suspected or potential contaminant problems.

"The survey was made to better define the presence of potentially harmful contaminants affecting national wildlife refuges," said Assistant Secretary William P. Horn. "It is based on information from refuge managers and Service contaminant specialists, and represents the best available information on contaminants affecting refuges. We will now develop action plans to address the problems defined in the report."

The report, entitled *Preliminary Survey of Contaminant Issues of Concern on National Wildlife Refuges*, describes contaminants believed to have a persistent, adverse impact on refuge habitats, animal populations, or human health and safety, or that may violate Federal or State laws, local ordinances, or international treaties.

Most contaminants identified in the report come from agricultural, industrial, or municipal activities outside the refuges and are carried to the

refuges by either natural or man-made water systems. Examples of contaminants identified include pesticides, PCB's, asbestos, selenium from irrigation drainage, and heavy metals such as mercury.

The report identifies 77 existing or potential contaminant problems affecting a total of 84 refuges. Some refuges have more than one contaminant issue and thus are included in more than one of the following categories.

• Category A—10 contaminant problems affecting 10 refuges. Included in this catergory are sites where evidence indicates a problem exists requiring corrective action. Refuges in Category A are Wheeler, Alabama; Kenai, Alaska; Kesterson, California; Seal Beach, California; Johnston Atoll, Hawaii; Crab Orchard, Illinois; Great Swamp, New Jersey; Ninigret, Rhode Island; Eastern Shore of Virginia, Virginia; and Fisherman Island, Virginia.

• Category B—27 contaminant issues potentially affecting 30 refuges. Included in this category are areas where on-site evidence indicates reason for concern, but more in-depth monitoring and study are needed to better define environmental impacts.

• Category C—40 contaminant issues potentially affecting 51 refuges. Category C includes refuges where there is no direct evidence that contaminants are present, but adjacent land use practices such as heavy pesticide use, previous industrial uses such as waste dumping, or comparison to other areas that have contaminant problems may lead a refuge manager to suspect contamination. Additional monitoring is needed for Category C areas.

The Service will prepare plans outlining response strategies for each of the contaminant issues identified and set priorities for follow-up actions. In most cases, a coordinated effort involving local, regional, State, and Federal entities will be needed to remedy the contaminant issues. The Service plans to seek cooperation from those responsible for the contaminants in funding the remedial actions.

As research and monitoring efforts proceed, the classification of areas in the report may change. Some contaminant issues in Categories B and C may be found to warrant inclusion in Category A, while others may be found to be insignificant and be removed from the list. Other issues not now apparent may surface and be added to the list.

The Service surveyed resource problems on refuges, hatcheries, and research laboratories in 1981-82 and published the results in 1983. That report reflected the perceptions of Service personnel on problems such as water quality, vandalism, littering, and others, and no concerted efforts were made to refine or verify the information before the "Resource Problems" report was published. In 1985, the Service began the present survey to update, consolidate, and refine a list of contaminant issues affecting refuges.

NWF Sets Wildlife Week

National Wildlife Week is just around the corner. March 16-22, 1986, has been designated by the National Wildlife Federation as the week aimed to enhance public awareness of wildlife conservation.

According to the Federation, "No matter where you are—at home or at work or on vacation—the fascinating world of wildlife is there to be discovered. There are various ways you can help conserve wildlife. Gardeners and landscapers help wildlife by using plants that provide food and shelter. By putting up a feeder or bird house at home or school, by putting a dish of water on the lawn, or by putting sunflower seeds or bird seed in a window box, you, too, can help wildlife."

Whirling Disease Strikes California Hatchery

Jim Warren
Fish Health Manager
Region 1
Portland, Oregon

Steelhead trout production was recently interrupted by disease at the Coleman National Fish Hatchery in California's upper Sacramento River Basin. Coleman has annually reared and released more than a million smolts for migration to the Pacific Ocean via San Francisco Bay. Whirling disease, an incurable parasitic infection caused by the protozoan *Myxosoma cerebralis*, was confirmed in July 1985 in the current crop of steelhead. The Service's national fish disease control policy gives a high priority to preventing the spread of this disease.

Region One Director Richard Myshak observed that "Although the parasite is widespread in California and Nevada, it has not been found in Northwestern steelhead stocks. Despite very long odds that Coleman-produced steelhead would stray that far to the north and infect these stocks, I cannot guarantee it. British Columbia, Idaho, Oregon and Washington fishery agencies and private trout growers have urged us and the California Department of Fish and Game to kill the infected fish rather than stock them into waters that would give them potential access to the ocean and possibly to the Northwest."

Nature of disease

Whirling disease is a parasitic disoase of salmonids caused by the microscopic protozoan *Myxosoma cerebralis*. The disease gets its name from the frenzied tail-chasing behavior occurring in fish infected at an early age. High mortality may occur in heavily infected fry but in surviving fish various signs of crippling or deformity can result. Few signs of disease may develop in light infections. in fish first exposed after several months of age, or in resistant species.

Not all salmonid species are equally susceptible. Rainbow, golden and brook trout suffer most while lake trout and coho salmon may not become infected. Other salmonids can be infected but disease signs may or may not develop. Apparently healthy, infected fish can carry the disease wherever they go.

The life cycle of the parasite has only recently been discovered and confirmatory studies yet remain. Apparently, *M. cerebralis* spores released from decaying dead fish or shed from live carriers infect tubificid worms residing in the stream or pond bottom. In the worm, the parasite develops into a parasite of the genus *Triactinomyxon*. Salmonids exposed to tubificids infected with the parasite or to water flowing from infected worms become infected with the disease. This helps explain the "aging process" required for *M. cerebralis* spores to become infective ... a developmental process now believed to occur in the tubificid intermediate host.

Background in California

The history of whirling disease in California goes back to 1966. Isolated cases encountered during the next 18 years were controlled by eradication and site disinfection. In early July 1984, juvenile trout at the Mount Whitney and the Black Rock State Fish Hatcheries displayed classic signs of whirling disease but little mortality. In these cases, pathologists believe whirling disease first occurred in 1983 but went undetected in fish held at the Black Rock hatchery. Some of these fish were planted above the Mt. Whitney hatchery before the disease was diagnosed.

Alerted by two more cases uncovered in commercial trout hatcheries on the Mokelumne River on the west slope of the Sierra, state pathologists began a detailed survey to determine the range of whirling disease in waters of the state. To date the pathogen has been detected in cultured and wild salmonids in at least 50 locations, including several tributaries to the Sacramento River. Few instance of overt mortality have been encountered to date.

Chris Horsch, federal fish pathologist at the Coleman National Fish Hatchery, was notified by California DF&G personnel in February 1985 that some 350,000 trout had been destroyed at the Darrah Springs state hatchery upstream from Coleman because of suspected whirling disease. The diagnosis was never confirmed but Horsch initiated a special routine for detailed examination of young steelhead and chinook salmon at Coleman.

For several months all reports were negative. In June, however, signs of infection were detected in steelhead fingerlings and a confirmed diagnosis was made in late July. The young chinook remained free of infection.

Control meaures at Coleman

Fish production at Coleman now utilizes raw water from Battle Creek. Fish carrying viral, bacterial and parasitic fish pathogens reside upstream from the hatchery. Fish disease control has been a major difficulty at the hatchery since its construction. A dependable, pathogen-free water source would prevent access to dangerous pathogens, greatly improve fish health and quality, and increase the number of viable smolts produced.

Since *M. cerebralis* has been detected in resident rainbow of up to 4 years of age in Battle Creek above Coleman, continued rearing and release of steelhead trout could greatly amplify whirling disease in the Sacramento River basin and present a threat to other salmonid resources through straying. Continued salmon production should pose no threat of disease spread as long as they remain uninfected.

The Service is examining the potential use of ground water at Coleman, coupled with a stream water purification process, which would allow production of more than a million steelhead. The 1986 budget contains slightly less than $2 million for improving Coleman's water supply but an engineering contractor has already advised that the funds available will likely not be sufficient to purify the water supply required for full production. However, these funds will be used to begin work on a long range solution to the operational problems at Coleman.

Bill Meyer, Public Affairs Officer

Program Honors Martin Luther King and "His Dream"

Sam Lyons
EEO Officer
Portland Regional Office

The Portland Regional Office of the Service co-sponsored a program with the Oregon State Office of the Bureau of Land Management and the Bonneville Power Administration to observe the first National Martin Luther King, Jr. holiday. The program, held on January 10th, was the only federally sponsored celebration in the Portland area. It was attended by approximately 600 Federal employees and citizens of the surrounding communities.

The featured speaker was Martin Luther King III. King stressed he hopes his father's dreams would be kept alive by individuals seeking to improve conditions in their communities. He also called for continued efforts to eliminate poverty and to help homeless people in the Nation's largest cities.

Regional Director Richard J. Myshak (left) welcomes Martin Luther King III to Region One.

Bear Valley NWR Nears Completion

Bureau of Land Management Director of Oregon-Washington Bill Leavell (left) and Western Regional Director for the Service Dick Myshak are shown during the ceremony to accept the deed for an 884-acre addition to the Bear Valley National Wildlife Refuge.

A recent land exchange between the Bureau of Land Management (BLM) and the Oregon State Board of Forestry, with subsequent deeding of 884 acres from BLM to the Service, represents another vital addition to the Bear Valley National Wildlife Refuge. When negotiations conclude with Boise Cascade and then Weyerhaeuser, the 4,100-acre refuge to protect the largest wintering population of bald eagles in the lower 48 will be complete. From November until April nearly 600 eagles call the Klamath Basin home.

The project's first land tract had to be acquired through condemnation literally hours before it was to be logged. From this difficult beginning in 1978 that generated strong local opposition, the opinion of the Klamath Falls community toward protection of eagle habitat has changed dramatically.

A key factor is the annual bald eagle conference initiated in 1980 by the Klamath Basin refuge, the Oregon Department of Fish and Wildlife, and local Audubon chapters. From a 1980 attendance of 150, it now approaches the available capacity of 400. The Klamath Falls community is strongly supportive of the conference and the local Chamber of Commerce provides advertising, information on accommodations and restaurants, and assistance in preparing the printed programs. The Weyerhaeuser Company funds printing of the program. It has now become apparent to many that eagles are both aesthetically and economically valuable.

Eagle Hacking Key to Recovery

Dennis E. Prichard
Sequoyah NWR
Vian, Oklahoma

On most any project, each individual has his or her own ideas about the best way to do the job at hand. This is what makes us all unique, and it makes our various conservation agencies unique also. But if nine different organizations try to accomplish one specific task, one could readily expect a certain amount of friction. Well, as we say in eastern Oklahoma, "it ain't necessarily so."

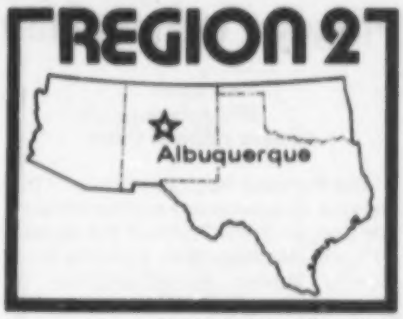
For example, a plan was devised by Steve Sherrod and M. Alan Jenkins of the George Miksch Sutton Avian Research Center in Bartlesville, Oklahoma, to raise and release bald eagles in the Sooner State. The proposal was presented to Dr. James Lish at the Oklahoma State University Cooperative Wildlife Research Unit in Stillwater, Oklahoma. He was enthusiastic about the plan and knew the best possible places to try it out.

In October of 1984, the three gentlemen visited Sequoyah National Wildlife Refuge to propose the project to the refuge manager, John Akin. The meeting also drew Sue Lauzon and Dana Base, non-game biologists from the Oklahoma Department of Wildlife and Conservation. They agreed to assist the project financially and physically. Rangers Lloyd Isley and Bob Burnett of the neighboring U.S. Army Corps of Engineers' Robert S. Kerr Reservoir pledged their support also. The refuge, located on this reservoir, was chosen as the best site in the state for such an undertaking. The refuge staff agreed to provide security for the site and help in the various tasks that might arise with the project. Now there were five organizations involved.

Historically, some bald eagles had nested in Indian Territory prior to statehood. Around the turn of the century though, most all nests were abandoned due to indiscriminate shooting, habitat loss and human disturbance.

Shortly, two more contributors were pressed into service. Researchers at the University of Florida were working with the U.S. Forest Service at the Ocala National Forest in Florida, locating nests of the endangered southern bald eagle. As egg-laying started, Sherrod and Jenkins rushed to acquire eggs from these wild donors. It has been proven that if eggs are collected soon after laying, the eagles will lay a second clutch. Still, timing must be right, for if one waits too long to collect eggs after laying, the adults will abandon the effort.

Eighteen eggs were taken, and in the next few weeks all adult pairs had laid a second clutch. Now, if all the eggs hatched it would essentially double the production of these birds.



Tom Smylie, Public Affairs Officer

Eggs were kept at 99 1/2 degrees F. all during their incubation. At one point they were placed under sitting chickens as this has been found to increase hatching success rather than incubating them solely by mechanical means. This method must have some merit as 17 of 18 eggs hatched. The one unhatched egg was infertile.

The baby eagles were placed in individual "nests" to decrease sibling rivalry. Each was fed with a hand puppet resembling an adult bald eagle. This imprinted the chicks toward an adult bird, keeping them somewhat wild.

Technicians Gwyn McKee and Barbara Bresson fed the eagles a diet of chicken and fish several times a day. The food was frozen and stored for a period of time before being fed to the chicks.

Unkown to the researchers, frozen fish produce thiaminase which breaks down vitamin B. Suddenly, and without warning, four eaglets

photo by Chuck Robinson—Sequoyah County Times

Gwyn McKee (left) and Steven Sherrod band a young bald eagle prior to placing it in hack tower.

photo by Dennis Prichard

Young bald eagles in the hack tower.

were dead from a lack of this vitamin. Frantic calls and literature searches finally found the culprit, and frozen fish was dropped from the birds' diets. It was now fresh fish or chicken for the remainder of the brood which made the "mothers" work that much more.

The eagles grew fast and by eight weeks of age the group was ready to graduate to the next phase of the program. They were leaving the easy indoor life of the research center to travel to their new homes high atop towers painstakingly built by the cooperators. Weeks had been spent laboring to erect a 20-foot high tower to hold the birds and act as a feeding station after their release.

Similar towers were erected in the States of Alabama and Georgia where some of the brood would be destined. Thus two more cooperators were added to the list; the Tennessee Valley Authority and the State of Georgia. Four birds went to Alabama and three were hacked in Georgia.

On March 22, 1985, all the work came to a climax. Representatives from the news media came to the refuge to cover the hacking story. A brief history and explanation of the program was given and questions were answered. Afterward everyone proceeded to the tower site where the babies awaited. Cameras filmed the banding of each bird and then watched as they were raised into the tower. The project received excellent coverage.

The eagles' reaction to humans was just as predicted—they were terrified. By careful handling and good control of the reporters this terror was kept brief and to a minimum. As each bird was placed in the caged tower it scrambled to a far corner, turned its back and sulked. It was typical behavior for wild eaglets. Within a few hours of being left alone, the birds started to relax and get acquainted with their new surroundings.

Two sides of their nest box blocked the sun while the other two sides and part of the roof was covered by panels of metal bars spaced so the eagles could look out into their new world. This also permitted wind to flow through the structure which the birds found useful in strengthening flight muscles. Feeding took place daily via a side entry port and an observer watched the birds through a one-way glass window.

The birds became accustomed to the tower and the area for 3 weeks. As the bars were removed from the sides and top, the birds were free to come and go as they pleased. At first they were hesitant to leave, but soon two made their first flight away from the tower. Others followed suit after they stretched their wings and gained courage.

Radio transmitters beeped their locations to the two technicians waiting in the brush. Only a few birds had to be helped back to the tower as nightfall surrounded them. Most fared well in the treetops, but some preferred the ground. This is not healthy for young birds at this refuge as the resident bobcats are numerous. Those found on the ground at dusk were carefully placed back in the tower to spend the night in relative safety.

Food was always kept ready at the tower to encourage the birds to stay in the area. Most came back to feed at least once more before taking off on their own while some immediately left the area for parts unknown. Nature will have to suffice for their needs now.

It is hoped that, as these birds reach adulthood in four to six years, they will return where they were raised to set up their own nests and help increase the population of bald eagles in Oklahoma. This project also stands as a successful effort between different agencies and organizations. When the goal of a project is as important as this one, cooperation comes easily.

Jim Ross, Public Affairs Officer

Regional Director Honored by DU, Midwestern

Regional Director, Harvey K. Nelson, received two significant awards during 1985. Ducks Unlimited, Inc., presented him with a Special Service Award for 35 years of cooperative waterfowl management, with specific emphasis on assistance in developing and implementing the DU U.S. Habitat Program. The Midwest Association of Fish and Wildlife Agencies presented Nelson with their Award of Merit for personal contributions to the group's programs and improved Federal-State relationships. Shown with the Regional Director at this presentation of the Midwest's award are Bill Hanzlick (left), Director of the Kansas Fish and Game Commission, and Bill Bailey (right), Assistant Director of Nebraska Game and Parks Commission. It was noted at the presentation that this was the first time the Midwest award has been given to a Federal employee.

Nationally Famous Cartoonist Assists Service Wetlands Efforts

Don Pfitzer, Public Affairs Officer

Donald W. Pfitzer
Region 4
Atlanta, Georgia

In keeping with the Secretary's program "Take Pride in America," Jack Elrod, writer/author of the "Mark Trail" adventure strip recently helped the Service with its *Wetlands Coloring Book*.

The idea of a coloring book came in late 1983 to emphasize the great value of wetlands and to encourage the sale of Duck Stamps. It was to be a part of the 50th anniversary commemoration of the Duck Stamp.

My first thought was to see if Jack Elrod was interested. His skill with the pen, great understanding of ecological systems, and his keen interest in educating people to better understand the value of natural resources made him the natural for such a project.

Not only was Jack interested, he was willing to do the project in the time frame asked by the Washington Office. With a limited outline and a few ideas, Jack produced the *Wetlands Coloring Book* by the end of February 1984. It took over a year to get the first copies off the press. It has now been printed for the second time and is a perfect example of Secretary Hodel's "Take Pride in America" program.

Jack Elrod is truly one who cares for the Nation's wildlife and other natural resources—and the public land and water that supports them. We expect the coloring book to carry the wetlands story for a long time.

On December 17, 1985, Dr. Gene Hester presented the following letter along with a framed copy of the coloring book to Jack Elrod, with sincere appreciation from the U.S. Fish and Wildlife Service:

Dear Mr. Elrod:

I've been a follower and fan of the Mark Trail series for years—and hence when I learned from our friends in the U.S. Fish and Wildlife Service of your generous and gracious participation in their Duck Stamp promotional efforts, I just wanted to let you know how grateful we are.

The *Wetlands Coloring Book* has been quite a success—we're into our second printing already. I'm rather convinced it will become one of the Service's perennial best seller items to conservation educators all around the country. Without your artwork and text, the results just wouldn't have been the same.

Once again, for your generosity, your concern, and your commitment to conserving our wetland resources—our sincere thanks and appreciation.

Sincerely,
Bill Horn
Assistant Secretary for Fish and Wildlife and Parks

photo by Ann Dunnavant

Jack Elrod (left), writer and artist for the "Mark Trail" Adventure strip, receives Assistant Secretary Horn's letter of appreciation and a Wetlands Coloring Book from Acting Director Eugene Hester, at a Regional Office ceremony in Atlanta, December 17, 1985. Mr. Elrod was the artist for the coloring book.

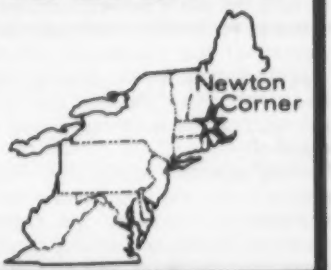
Merritt Island Visitor Center Dedicated to Memory of Two Employees

photos by Nancy Paul

The sign designating the visitor information center at Merritt Island National Wildlife Refuge bears the inscription: "Scott Jay Maness and Beau William Sauselein died from burns received while fighting a wildfire, June 8, 1981, on Merritt Island National Wildlife Refuge. Their contribution to the wildlife resource remains as an inspiration for those who remain to manage the refuge they so dearly loved. In their memory this building is dedicated."

Mrs. Schneider (Scott's mother), Elizabeth Sauselein (Beau's widow) and Mrs. Sauselein (Beau's mother) cut the ribbon during the dedication ceremony of the Maness—Sauselein Visitor Information Center on November 17, 1985. Members of both families look on from the walkway to the building.

REGION 5



Inez Connor, Public Affairs Officer

Secretary Hodel Visits Bombay Hook

photo by Ken Liehr

Successful goose hunter Al Dager discusses his calling and decoy setting techniques with Secretary Hodel, Acting Director Eugene Hester, Refuge Manager Paul Daly, and Delaware Fish & Wildlife Director William Wagner during a recent birdwatching visit to Bombay Hook National Wildlife Refuge in Delaware. Photo by Ken Liehr, recently retired refuge maintenance mechanic.

Senator John Chafee, Other Dignitaries Assist Striped Bass Effort

photo by Inez Connor

Senator John Chafee of Rhode Island, chief architect of the Emergency Striped Bass Study, took a personal hand in restoring the species to Chesapeake Bay by tagging some of the 210,000 fingerlings that were reared in national fish hatcheries and stocked in their natal tributaries. Assistant Secretary Horn, Fish and Wildlife Foundation Executive Secretary Charles Collins, Associate Director Joe Kutkuhn, Northeast Regional Director Howard Larsen, Maryland Secretary of Natural Resources Torrey Brown, about two dozen media, and a documentary film crew gathered at the Cedarville State Fish Hatchery in Brandywine, Maryland, as the tagging and stocking project neared completion in December of the first of a 5-year cooperative restoration program with Maryland. The fish were tagged with tiny, magnetically coded wire tags identifying the river of origin, the rearing hatchery, and year of release. The tags will provide important information on the fish's growth and survival rates in the Bay and later during coastal migration, and also the best hatchery-rearing techniques. The fish were reared at Frankfort, McKinney Lake, Harrison Lake, Orangeburg, Bowden, and Edenton National Fish Hatcheries and also at Cedarville, and at the Baltimore Gas and Electric Company's special facility in Baltimore. A million and a half striped bass are expected to be reared and released next year.

REGION 5

Eastern Shore NWR Open House Features Rare Decoy Collection

Barbara Donlon
Public Affairs
Region 5
Newton Corner, Massachusetts

A diverse collection of decoys on a 5-year loan from Mrs. Phyllis Ellison of Savannah, Georgia, was the featured attraction of a recent open house at the Eastern Shore of Virginia National Wildlife Refuge at Cape Charles.

The refuge, established in 1984 with the transfer of the former Cape Charles Air Force Base, is particularly important to migratory birds that stop to rest and feed before and after crossing the Chesapeake Bay during migration.

The several hundred people who attended the event were collectively impressed with the uniqueness and beauty of the handsome exhibit. It features functional decoys dating back to the 1800's, up to the decorative, nonworking pieces of today.

Although the collection focuses primarily on the unique character of the decoys made by the highly influential Michigan carvers, it also includes an 1865 decoy by an American Indian and one made from reeds by a Cree Indian of Ontario, Canada, in 1970. These two unique examples, although crafted 100 years apart, link an art form believed to have been created by American Indians 1,000 years ago. The Indians had learned and early settlers quickly mastered the idea that wood, rushes, or any handy material could easily be bent into shapes and set in the water to lure some of the millions of waterfowl that took to the skies during migration. Public appreciation has gradually grown through the influence of collectors like Phyllis Ellison who have helped preserve the history and beauty of decoy carving.

Mrs. Phyllis Ellison, Savannah, Georgia, life-long decoy and wildfowl art collector, is presented an appreciation plaque by Deputy Regional Director William C. Ashe (left) on behalf of the Service for the generous loan of a portion of her extensive decoy collection which is on display at the Eastern Shore of Virginia National Wildlife Refuge. Representative Herbert Bateman of Virginia (right), keynote speaker at the refuge's open house of the recently renovated visitor facility, shares in the presentation.

Sam Marler, Public Affairs Officer

Status of Grizzly Bear in Lower 48

Christopher Servheen
Grizzly Bear Recovery Coordinator
Region 6
Lakewood, Colorado

The grizzly bear *(Ursus arctos horribilis ord* was once present throughout most of the western United States and south into Mexico. With the settlement of the west by the white man, the range of the grizzly bear was reduced through human-induced mortality and habitat destruction. The present range of the grizzly bear in the lower 48 States is approximately 49,000 square kilometers in Montana, Wyoming, Idaho, and Washington. Population estimates for these areas range between 700 and 1,000 bears.

The grizzly bear was declared a threatened species in the conterminous states in 1975. Since that time efforts have been underway to recover the existing populations to levels where protection under the Endangered Species Act is no longer necessary. Examples of these recovery efforts include habitat management and protection, limiting the killing of bears by people, keeping bears from human foods and garbage, and public education about bears and their needs for survival.

These actions are not enough for some small, isolated populations, however, and other actions may have to be taken to bring about recovery. One of these other possible actions is the augmentation of existing populations with bears from other areas. Augmentation would entail placement of bears in an area where the population is so low that an increase in numbers from natural reproduction is either too slow or not possible given the age and sex structure of population. No augmentation has been tried to date, but plans have been discussed for such an effort in the future should existing socio-economic and biological concerns be met.

At present two methods of augmentation are under consideration. The first involves taking carefully selected wild bears from an area of high population density and placing them in the area to be augmented. These bears would be carefully monitored after release and plans would be developed to deal with them should they get into trouble with people or leave the target area.

The second method of population augmentation would involve the cross-fostering of captive-raised grizzly bear cubs to resident black bear (*Ursus americanus)* females in the target area. Black bears and grizzly bears can inhabit the same area without cross-breeding. Their food habits and habitat use are also very similar.

Cross-fostering has the advantage that the cubs could not "return" and—if they were accepted by the black bear female—they could learn successful feeding strategies, habitat use, and avoidance of many human activities during the two years they would remain with their foster mother.

Cross-fostering has never been tried in the wild on bears. It has been demonstrated successfully on black bears where orphaned cubs were placed with adult females who had cubs of the same age. In the case of black bears, the orphaned cubs were placed in natal dens prior to emergence of the foster mother and her natural young in the spring.

Alaskan Grizzly Faces Image Problem

George Sura, Public Affairs Officer

Brown bears on Kodiak Island have an image problem. The fear many people have of bears creates an emotional aura about the island. The result, according to biologists, is that nonaggressive bears are often shot simply because they're perceived as threats to people, and not because of acts of aggression.

Management of Kodiak bears, a resident species, falls under the jurisdiction and authority of the Alaska Department of Fish and Game. The Kodiak National Wildlife Refuge, which covers two-thirds of the island, is managed by the Fish and Wildlife Service.

State and federal officials are caught in a dilemma. Alaska law allows anyone to kill a bear in defense of life and property (DLP law). Wildlife managers acknowledge that the law is practical and necessary provided the meaning of the law is not unduly stretched and used as a loophole to kill bears indiscriminately under the pretense of self-defense.

"We're trying to eliminate the wounding and killing of Kodiak brown bears that are needlessly shot under the guise of self-defense," says Kodiak refuge manager Jay Bellinger. "At the same time, we're primarily interested in the safety of people who visit the refuge."

The Alaska Department of Fish and Game estimates there are around 2,500-3,000 brown bears ranging in the Kodiak archipelago. The presence of so many bears, coupled with ever-increasing use of the refuge, means more people are exposed to bears every year.

Roger Smith, area biologist for the Alaska Fish and Game Department, and Vic Barnes, Service research biologist assigned to the refuge, confirmed that a significant number of bears killed in DLP cases are sows with cubs. This troubles the biologists because female bears are critical components of subpopulations. They point out that loss of a female bear means loss of subsequent reproduction by that bear. Brown bears don't start breeding until they are 4 or 5 years old, or older, the biologists said. Young-of-the-year cubs have less than a 10 percent chance of surviving when the maternal sow is killed.

Biologists contend that many bear attacks in Alaska occur chiefly because of human carelessness and errors in judgment. There are valid exceptions, of course, but recreationists who maintain sloppy camps or set up their camps in heavily used bear areas can attract bruins. Refuge visitors are told to be mindful of food and odors that can lure bears to their campsites. Deer hunters are advised to cache game meat well away from their camps to avoid bear confrontations.

Still, solutions don't come easily. Research biologist Barnes says, "A certain number of Kodiak brown bears fall as DLP casualties as a convenience. It gets back to the image problems bears have. People don't want bears hanging around. When the meaning of the DLP law is stretched, we end up with convenience killings. We often hear or read that brown/grizzly bears are wilderness animals and won't tolerate people. That is not entirely true. Some bears are not reluctant to mingle with people. The problem is that people can't tolerate bears."

Inexperienced persons, intimidated by bear yarns, may overreact when they see a bear at any distance. They tend to panic and inadvertently become a threat to themselves, to others in the area, and to the bear.

"Once the novelty of a bear's visit wears off, people start worrying about their personal safety," state biologist Smith said. "The bear's odds for survival decrease as the frequency of his visits increase."

Refuge manager Bellinger says, "We Americans have been thoroughly indoctrinated with bear stories heaped upon bear stories. We are persuaded to focus on the gruesome side of bear-people relationships. Facts are absolutely essential for public awareness and human safety, but the bears can't tell their side of the story. When people come here presold on the notion that the Kodiak brown bear is 'North America's most dangerous game animal', then a bear is placed at a notable disadvantage in any imagined self-defense situation. Emotion overrides logic."

The refuge staff and state biologists at Kodiak provide brochures and advice to people who visit the island. Wildlife officials want visitors to have an exciting but safe experience. But, they add, "We want the bears to remain calm and healthy."

Five persons have been mauled at Kodiak Island in the past 10 years. The low incidence of bear attacks is surprising, according to refuge personnel, when compared to the thousands of visitors who frequent the refuge. According to Service and state records, none of the attacks resulted in fatalities or disabling injuries.

Brown bear on Kodiak Island, Alaska

Is it the Predators?

Diana Cross
Office of Information Transfer
Ft. Collins, Colorado

Churning turbine blades at hydropower dams have been blamed, at least in part, for the significant decline in Columbia River salmon and steelhead populations that has occurred during the past 40 years. However, Service research has shown the average mortality among young salmon migrating through reservoirs may be greater than the losses just from turbines. Reservoirs associated with dams provide habitats that benefit predatory fish such as channel catfish, northern squawfish, walleye, and smallmouth bass.

Researchers at the Seattle National Fishery Research Center's Willard Field Station have been conducting a study to evaluate the impact of this predation. The study will document for the first time just where predation is occurring, which species are the chief predators, and how many juvenile salmon, or smolts, are being lost. The project is being conducted in cooperation with the Oregon Department of Fish and Game and is funded by the Bonneville Power Administration.

According to Gerry Gray, project leader for the study, the task of estimating losses of juvenile salmon is difficult due to the number and size of Columbia River impoundments. Thus the study area has been limited to a single, 76-mile long reservoir with a large predator population, and populations of chinook, coho, sockeye, and steelhead smolts. However, the results of sampling in this area may be applicable to other impoundments.

An intensive sampling program was developed to collect predators from April through August—the peak of the smolt migration. Sampling with a boat-mounted electrofisher, gill nets, and bottom trawl, biologists collect predatory fish at each of four sampling stations for three consecutive 24-hour periods each month.

Predatory fish have their stomachs pumped using a jet of water and then are tagged and released, hungry but unharmed. In the case of northern squawfish and channel catfish which are not easily pumped, the fish are killed and stomachs removed.

The stomach samples are processed back in the laboratory. Prey fish found in stomachs are identified as to species, using unique features of the fishes' skeletal structure, and their original weight is estimated. Average daily consumption by each predatory species is estimated by a computer program that compares digestion of field specimens with specimens obtained under controlled conditions in the station's laboratory. To estimate juvenile salmon losses, consumption estimates are combined with predator abundance estimates derived by Oregon Department of Fish and Wildlife personnel.

According to study coordinator Bill Nelson, preliminary results indicate that several million hatchery and wild salmon smolts are consumed each year on their way to the ocean. Northern squawfish account for most of the losses. Squawfish appear to concentrate immediately above and below dams, where migrating smolts are delayed, funneled through bypass facilities, and released downstream in a stressed condition. Disoriented, stressed fish are more susceptible to predation.

Hatcheries in the Columbia River drainage are intended to produce enough salmon to mitigate for losses in spawning habitat caused by dams. It appears, however, that many of the smolts produced by these hatcheries have become, in essence, a very costly food item for a less than desirable fish having little sport or food value.

Fishery researchers from the Seattle center suggest that much of this predation may be reduced by modifying hatchery, release, and dam bypass practices. Sound fishery management, based on results of specific research recommendations, may allow us to balance the many demands on the Columbia River ecosystem, while striving to restore salmon populations to their historic levels.

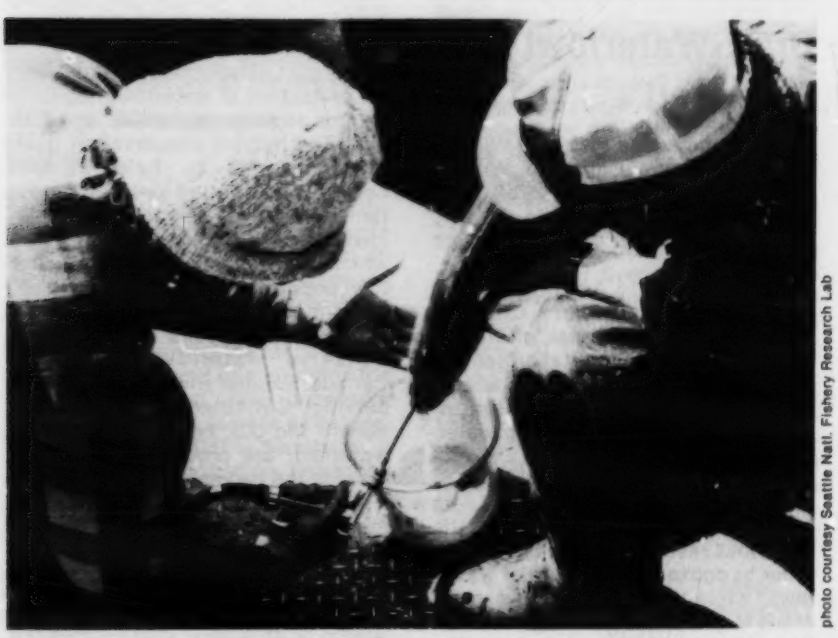
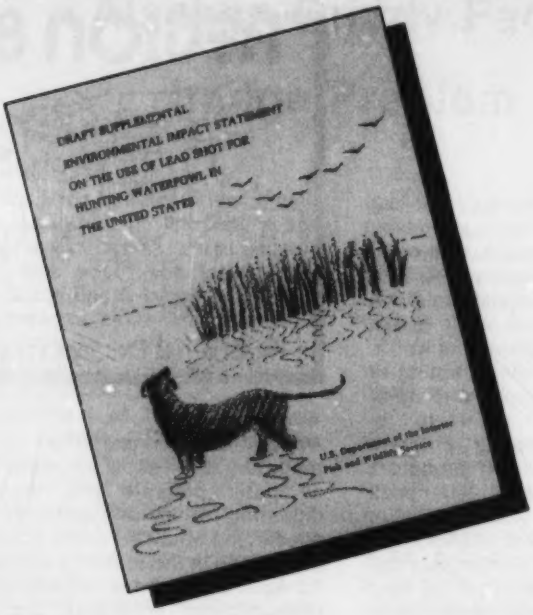
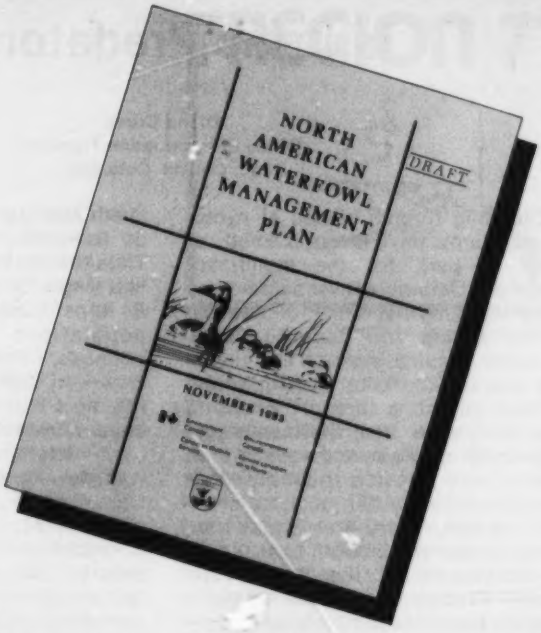


photo courtesy Seattle Natl. Fishery Research Lab

Biologists pump the stomach of a walleye as part of a study on predation being conducted by the Seattle National Fishery Research Center's Willard Field Station.

For more information about these and other subjects, contact Diana Cross at Research and Development's Office of Information Transfer in Ft. Collins, Colorado, at FTS 323-5451 or (303) 266-9451.





Steel Shot Update

So much has been happening on the nontoxic shot issue that it's not easy to keep up! Here's a quick summary of activities during late 1985 and early 1986:

• The Service proposed nontoxic shot requirements for parts of 44 states for the 1986-87 waterfowl season to prevent lead poisoning in waterfowl and bald eagles. The proposal included a significant expansion of "bald eagle protection zones"—areas where nontoxic shot requirements were proposed specifically to protect bald eagles from lead poisoning.

• A draft supplemental environmental impact statement on the lead poisoning issue was published for public comment. The statement provides six alternatives for eliminating lead poisoning as a significant mortality factor among migratory birds. The preferred alternative calls for banning lead shot in zones where there is a known or potential lead poisoning problem for waterfowl or bald eagles. The second and third alternatives are the same as the preferred alternative, except that each uses different criteria for identifying bald eagle protection zones. Under the fourth alternative (no action), waterfowl seasons would not be opened. The fifth alternative would prohibit lead shot for all waterfowl hunting, phasing in this requirement by flyway over four years. Under the sixth alternative, the Service would permit the use of lead shot, but states could voluntarily require nontoxic shot if they wished. Public comments were accepted through February 19.

• The National Wildlife Federation announced its intention to sue the Department of the Interior unless the Department requires nontoxic shot for all waterfowl hunting in the 48 contiguous states beginning with the 1987-88 waterfowl season.

Draft Waterfowl Plan Released

In December the Fish and Wildlife Service and the Canadian Wildlife Service jointly issued a draft plan outlining what needs to be done to conserve waterfowl through the year 2000.

The draft "North American Waterfowl Management Plan" calls for cooperative international efforts to increase waterfowl habitat protection and enhance waterfowl populations. It summarizes the status of waterfowl populations, identifies major waterfowl conservation problems, and proposes ways to resolve the problems.

"The North American plan sets targets for people who value the waterfowl resource to work toward in order to conserve the future of waterfowl," explains Rollin Sparrowe, chief of the Migratory Bird Management Office. "It's not a how-to document. It's a what's-needed document. We expect the North American plan will be stepped-down by the national governments of both countries, states, provinces, and flyways to specify how these recommendations will be carried out."

The plan focuses on protecting key waterfowl habitats in both the U.S. and Canada through a combination of programs, ranging from acquisition and easements to providing incentives for landowners to help conserve and manage waterfowl habitat. It stresses the need for conservation organizations, private corporations, and the public to participate in expanding the conservation efforts.

The plan establishes acreage goals for protection of waterfowl habitat in various regions of the U.S. and Canada. The habitat conservation goals are designed to help achieve desirable population levels for important waterfowl species. The plan identifies species population goals, which are based on average waterfowl populations during the 1970's.

An important element of the plan is a proposal to spend U.S. money to conserve waterfowl habitat in Canada. Greater involvement in conserving Canadian habitat would benefit the U.S. because while most waterfowl are produced in Canada, most of the harvest occurs in the U.S.

The plan does not change the means by which waterfowl hunting regulations are established. It focuses on waterfowl issues where international cooperation is essential, leaving other matters to be addressed by existing mechanisms, such as flyway councils.

LETTERS TO THE EDITOR

Dear Editor:

I have just perused the October-November 1985 issue of *Fish and Wildlife News*. Again, I am reminded that this newsletter is directed virtually to biologists and executives only. There are many other professions that make up the Service—contracting and classification specialists, budget and finance and administrative officers, payroll clerks, refuge and hatchery clerks, special agents and many, many secretaries. A large number of people in these jobs have been in the Service a long time and would enjoy reading about their counterparts in other parts of the country—some they probably talk to frequently on the phone. It would be nice if you could highlight one of these "types" in each issue with a photo, biographical profile, their aspirations and criticisms, and how they feel about working for the FWS.

The issue on the Finance Center was a good example of highlighting other areas of the Service.

Barbara G. Henry, Secretary
Regional Office, Denver

Editor's Note:

Dear Ms. Henry;
I think you will be pleasantly surprised by several feature stories that will be showing up in future editions of the newsletter. Thank you for the comment.

Dear Editor:

I apologize to Service employees, active and retired, that I did not write this 11 years ago. That's when, at an Albuquerque flea market, I happened upon a lone "Blue Goose" sign. While chatting with the lady selling it, I found it represented the last of a collection of signs and related items the woman's husband, now deceased, had collected as a Service employee.

The Fish and Wildlife Service, as a conservation organization, is second to none in the world. The majority of Service employees are a special breed rarely found in government. To even suggest we would work for another agency, and leave the management and protection of this Nation's wildlife resources to others, is heresy.

We have a heritage in the areas of waterfowl and fisheries management, habitat protection, law enforcement, and research. We have employees, past and present, that have devoted and are devoting their lives to wildlife and the organization. Yet, for all this, we lack a single repository to document for the future, the contributions and the names and faces of those who laid the groundwork that supports us.

You could say we have 434 refuges, 73 hatcheries, 15 major laboratories and many other small offices that represent the Service. But these represent only pieces of the whole.

Although there is a museum in the Interior Building in Washington, D.C, it is small and cannot donate all its space to a single bureau.

We need a U.S. Fish and Wildlife Service museum. Not a museum of overstuffed birds and mammals with tufts of feathers or fur missing or odd assortments of arrowheads in cases so dusty the public makes sure they avoid the place so they don't get their clothes dirty. We need a museum that protects and interprets the heritage of our great Service.

We need a single repository where the pictures from the early days to the present are displayed. Where the first patch, the first sign, the first tag, the first band, the first microscope, and the first typewriter are displayed and their importance explained. A secure area where the project leader—when he or she rotates—does not take the best decoy or the best sign. A place where the essence of our organization and its philosophy can be observed, enjoyed, and added to in years to come.

I have nothing more to offer than a perceived need. Even in these austere times the idea must be pursued. Perhaps it could be located in a building at Patuxent, Cape Charles, or Chincoteague—I don't care where. But if we don't start now, our Service heritage may go the way of the collection that disappeared in an Albuquerque flea market 11 years ago. And those that preceded us—their memories, their ideas, and their contributions—deserve better.

Russell D. Earnest
Program Development-
Wildlife
Washington Office

Dear Editor;

Every issue of *Fish and Wildlife News* has something in it that interests me, but the October-November issue was really special. Every page contained an article describing a significant contribution by a Service employee, program, volunteer, special interest group, or private corporation. Of particular interest was the number of special awards.

This is very refreshing considering the amount of internal conflict I see in the Service. We all know that we cannot have the budget and FTE's to accomplish everything that needs to be done. However, by feeling good about ourselves we can approach our full potential as natural resource stewards.

There is much to be concerned about but let's concentrate on the real issues. Our biggest public relations challenge may be ourselves.

Congratulations FWN. Keep tootin' our horn.

Robert C. Lee, Jr.
Piedmont National
Wildlife Refuge
Round Oak, Georgia

Dear Editor:

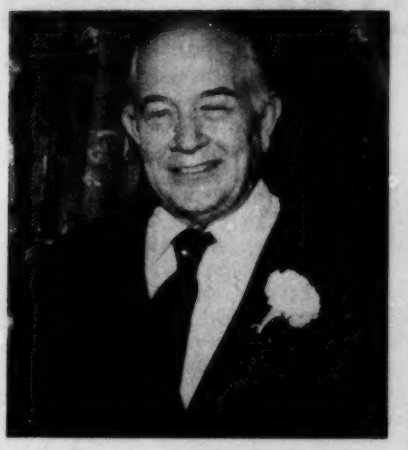
Just a comment—I appreciate and enjoy *Fish and Wildlife News* but why is it always about 2 months behind time arriving? Thanks for sending it.

Sincerely,
John H. Kiger

Editor's Note:

Dear Mr. Kiger:
Alas, there does not exist—in the Current Information office in Washington and the regional offices—an abundance of editorial folk who put together the Fish and Wildlife News. *For the few involved, it is one of those collateral duties you hear so much about and only one of the many things that must be done once the crises are handled. In addition, we at times take the liberty of holding up the newsletter for late-breaking stories concerning items of immediate interest. Hence, we may be slow sometimes, but we think the product is good, considering. Thanks for dropping us a note.*

Noted Researcher Dies



Dr. Wayne I. Jensen, an internationally known scientist associated with the National Wildlife Health Laboratory, passed away November 16, 1985, in Brigham City, Utah. Much of what is currently known about avian botulism resulted from his 25 years of research at the Service's Bear River Research Station in Utah, where he was Microbiologist-in-Charge. Following retirement in 1977, Dr. Jensen continued his research as a National Wildlife Health Laboratory volunteer.

A long-time member of the Wildlife Disease Association, he was also a member of the American Veterinary Medical Association, the American Society of Microbiologists, the American Association for the Advancement of Science, and a charter diplomate of the American College of Veterinary Microbiologists. Upon his retirement from the Service, Dr. Jensen was awarded the Department of Interior's Meritorious Service Medal. He was also a recipient of the Wildlife Disease Association's Emeritus Award.

A meticulous scientist and outstanding scholar, Dr. Jensen was also a humble, warm, and giving person. He will be deeply missed by all who knew him.

Employees Recognized

NWHL Pathologist Achieves National Distinction

photos courtesy Natl. Wildlife Health Lab

Nancy Thomas performs a postmortem examination as part of her duties at the National Wildlife Health Lab in Madison, Wisconsin.

Nancy Thomas, a veterinary pathologist at the National Wildlife Health Laboratory in Madison, Wisconsin, has become the first board-certified veterinary pathologist in the Fish and Wildlife Service. By passing the national certification examination of the American College of Veterinary Pathologists in September 1985, Dr. Thomas completed the final requirements for certification.

Dr. Thomas graduated from the School of Veterinary Medicine, University of California-Davis in 1978, and studied pathology at Washington State University where she also worked on a graduate research project investigating canine parvovirus in coyotes. She joined the NWHL in 1984 as the Laboratory's Endangered Species Disease Specialist. Her duties include postmortem examination of bald eagles and other endangered species submitted to the NWHL. She also advises on and coordinates health care for sick or injured endangered species.

Board certification requires at least three years of qualifying experience and study in veterinary pathology before application can be made to take the examination. Intense study in all areas of general and specialized pathology is required to pass the final written and practical examination. Only one out of every three applicants passes the examination each year. There are currently 606 board-certified veterinary pathologists in the United States.

Ornithologists Honored

Six Fish and Wildlife Service ornithologists were honored by being made Elective Members of the American Ornithologists' Union at the society's annual meeting. Elective members are chosen for significant contributions to ornithology and/or service to the Union. The six are:

Kathleen E. Franzreb, Endangered Species Biologist, Sacramento, CA
George M. Jonkel, Chief, Bird Banding Laboratory, Laurel, MD
M. Kathleen Klimkiewicz, Bird Banding Laboratory, Laurel, MD
Fritz L. Knopf, Denver Wildlife Research Center, Denver, CO
Paul W. Sykes, Jr., Endangered Species Biologist, Athens, GA
Sanford R. Wilbur, Region 1 Office, Portland, OR

FISH AND WILDLIFE NEWS

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FISH AND WILDLIFE NEWS

APRIL-MAY 1986

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U.S. Department of the Interior

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Special Report:

Publications and Communications

Publications. A vast generic term that encompasses an astounding variety of printed works, from research lab annual reports to refuge bird lists, from ecological characterization reports to your reliable *Fish and Wildlife News*.

Despite the advancing influence of electronic media, ours is still rather much a linear, print-oriented society. And print is one of the most important products of the Fish and Wildlife Service—not on the same qualitative plane as mallard broods or salmon, perhaps, but equally important in a different way.

Publications represent an important component of our commitment to serving (and communicating with) the public, conservationists, and Congress. From the earliest days of the Service onward, reports and accounts of the fish and wildlife resources of the United States have been an integral part of the agency's mission. Today, the Service prepares and issues a wide variety of new documents every year. And each year many titles are retired, their effective usefulness spent. At any given time, the Service has an "inventory" of more than 5,000 titles on fish, wildlife, and conservation—from scientific studies to hand-out folders for youth groups. And all, in their own ways, are designed to inform and remind the public of the values of their wildlife heritage.

Publications represent a significant investment in staff time and public money. To be sure that the investment is a good one, the Service continually monitors and reviews its publication needs and inventories. It's an on-going, never-ending process.

From time to time—especially in the interest of newer employees, but as a helpful reminder to all in the Service—it's useful to provide a guide to the whole array of Service publications.

In the special section beginning on page 10, we hope to answer many of the most commonly asked questions about those publications, where they come from, and where they go. If we happen to leave any components of the publications scheme out—be sure to let us know!

—The Editors

Frank Dunkle

Frank Dunkle Named Director

President Reagan certified his appointment of Frank H. Dunkle of Montana to be Director of the U.S. Fish and Wildlife Service effective May 8, 1986.

Dunkle's Presidential nomination was confirmed by the U.S. Senate without objection May 1.

Secretary of the Interior Don Hodel said he was "delighted to have someone with the natural resource experience and managerial talents of Frank Dunkle on the Interior Department team.

"He is well-grounded in the complexities of resource management in this country, having served Montana for so long as chief wildlife officer," Hodel said.

Dunkle, who was Coordinator for the Service's Colorado River Endangered Fishes Project in Denver, began his career in wildlife management as a special warden with the Montana Fish and Game Department in 1947 while an undergraduate at Montana State University. He joined the State wildlife agency as an education assistant in 1955 after Korean War service and completion of Bachelors and Masters Degrees in wildlife management at Montana State.

Working in jobs of increasing responsibility, Dunkle became Chief

cont. on p. 3

I 49. 88:

A Manager's Perspective: "Take Pride in America"

Edward S. Crozier
Refuge Manager
Minnesota Valley NWR
Bloomington, Minnesota

With over 400 units in the National Wildlife Refuge System and nearly 70 National Fish Hatcheries scattered across the Nation, the Fish and Wildlife Service is intensely interested in the national "Take Pride in America" campaign. This is especially important when one considers that these systems encompass over 90 million acres of vital wildlife habitat and facilities that are subject to littering, vandalism, and other assorted "people-associated" problems.

During FY 84, just under 25 million people visited Service facilities and, for the most part, it is likely these visitors will be receptive to the "Take Pride" message. As an example, 70 percent of the visitors were there to participate in wildlife related activities such as hunting, fishing, and wildlife observation, 20 percent participated in interpretation and recreation, and the remaining 10 percent took part in non-wildlife related recreation such as swimming and boating. So the majority of refuge visitors probably already care about wildlife and wildlands to some degree.

It is important to remember, however, that unlike other public lands, National Wildlife Refuges are open to public use only when such is compatible with the purposes for which the area was established. In other words, public use is a secondary use and allocations of funds and manpower are made accordingly.

For several years now the Service has been using our interpretive activities to foster an awareness of wildlife management objectives, including pride and respect in wildlife and wildlands. Since the solving of fish and wildlife problems is not going to be done solely on State or Federal lands, people must get involved in the conservation of their own lands, as well as continue to help public agencies manage wildlife.

As a result, the Service's field stations provide a broad range of activities that are already including themes that parallel the "Take Pride" initiative or ones that could be easily modified to include it. Most of the current activities are generated by field people using their own initiative. The scale of occurrence on any field station is dependent largely upon staff interest, the level of visitation, visitor interests, and facilities available. The challenge is for our field people to do these activities without much in the way of funding or manpower.

Perhaps a cornerstone for the "Take Pride" initiative could be volunteer programs at refuges. Our volunteer efforts offer the public hands-on involvement with management of this Nation's wildlife heritage and its habitat. Although the public has been helping us for many years in a number of ways, only recently has the volunteer effort been organized nationally and the initial results are impressive. (see accompanying story pg. 3)

Volunteers can become involved in a variety of activities which create a sense of pride in the area they are working with and a desire to protect it. One of the highest levels of field station volunteer effort is found in activities relating to general maintenance. Volunteers receive firsthand knowledge of vandalism and littering problems through this experience.

The second highest level of volunteer involvement is in activities associated with wildlife management. Many of our volunteers obviously come to us as a result of their interest in wildlife and the closest thing we can provide is an opportunity for them to take part in wildlife population surveys, construction of nest boxes, or any number of wildlife-oriented activities that are part of refuge operations.

The most critical part of any volunteer effort is coordination. At my field station, we are learning that the success of the program depends almost solely upon the degree of management and coordination. All too frequently this coordination—if not done by a volunteer—is a responsibility added to existing staff duties. As a result, the program receives little attention, especially at higher levels, in the form of dollars and manpower.

As I stated before, many of the Service's activities can help to instill pride in public lands. We should seize upon opportunities to evoke this feeling in our field personnel and our volunteers, as well as in casual visitors.

The following is a short list of just some of the ways the Service has become involved in fostering a conservation ethic or support for wildlife management. It is not exhaustive or all-inclusive, but meant to provide a few examples of activities refuges across the country can take in order to support the "Take Pride" initiative.

- Numerous field stations sponsor open houses or other special events as part of the annual observance of National Hunting and Fishing Day, National Wildlife Week, and National Fishing Week.
- There are also special "eagle watching days." What better way to build some pride than to see our National symbol, the bald eagle, soaring above our public lands?
- A number of refuges and other entities sponsor photography contests, wildlife art contests, woodcarving demonstrations, special interpretive events, senior citizen activities, and the like.
- "Young waterfowler training" programs provide sessions on hunting techniques, waterfowl identification, hunter ethics, and respect for wildlife and its habitat. Some of the programs have ended with the youngsters going afield with an experienced waterfowl hunter.
- A number of refuges have areas that are generally closed but the public can visit them as part of a special tour. The opportunity to get into these areas to see wildlife could help build a sense of pride in public lands. Certainly the "Take Pride" message could also be related to the visitor as part of the tour.
- Since the Service does a goodly amount of land manipulation, i.e. burning, flooding, farming, and sometimes draining, as part of its wildlife management practices, we also do a number of demonstrations. This would be an ideal place to include messages relating to respect for the land.
- For a number of years, the Service has conducted "outdoor classrooms" on refuges where the ac-

TAKE PRIDE *in America*

tivities are led by teachers. The agency adheres to the multiplier effect and provides teacher training and resource materials, but not the actual instruction.

The list could go on and on. There is little doubt the "Take Pride" initiative can be incorporated into much of what the Service does. Creating or enhancing pride in our public lands will undoubtedly—in the end—assist the wildlife manager in protecting and conserving our natural heritage.

Editor's Note: This article was excerpted from remarks made by Mr. Crozier to Secretary Hodel's field task force on "Take Pride in America."

Dunkle

cont. from p. 1

of the Information and Education Division in 1959 and Director of the Montana Fish and Game Department in 1963. He left the State agency in 1972 to enter the Republican primary for Governor. He lost the primary race by less than 2,000 votes.

After the election, Dunkle founded the Ecological Consulting Service in Helena. In 1974, he was elected to the Montana State Senate and a year later founded the Resource Education Foundation in Helena. From 1978 to 1980 he was Executive Director of the Montana Mining Association.

Dunkle became the Executive Director of the Montana State Republican State Central Committee in 1980. In 1981, he joined the Federal government as Staff Director, Mountain Plains Federal Regional Council. When the council was abolished in 1983, he joined the Service in Denver.

Born in Oakmont, Pennsylvania, in 1924, Dunkle is a past president of the Western Association of State Game and Fish Commissioners; 1970 Chairman of the Central Flyway Council; and a member of the International Association of Game, Fish and Conservation Commissioners.

He was named an Outstanding State Legislator of the Year in 1977 by the National Association of State and Federal Employees, and has received the Green Leaf Award from The Nature Conservancy, the Sears Foundation 1968 Water Conservation Award for Montana, the 1971 American Motors National Conservation Award, and the National Rifle Association's Hunter Safety Award for 1967.

A veteran of Navy service in World War II and Korea, Dunkle is a Commander in the U.S. Naval Reserve.

He will succeed Robert Jantzen who resigned last September.

Volunteers are becoming an increasingly important part of Service programs. Here one assists in some of the field work by measuring an albatross chick.

Volunteer Efforts Growing

Claudette Doffermyre
Office of Current Information
Washington Office

A report issued recently concerning the Service's Volunteer Program during FY 1985 shows a 15 percent increase in the number of hours contributed. However, for the first time, there was a slight drop—18 percent—in the number of individuals involved.

The report points out this seeming discrepancy may be attributed to an increase in the stability of the Volunteer Program, less turnover, and a more dedicated corps of volunteers contributing increased amounts of time to the Service.

This year's statistics show 698,050 hours of volunteer work were performed. Based on the salary of a GS-5, Step 1, volunteer's contributions were worth over $5.5 million.

As in past years, the number of volunteers over 60 years of age comprised a very small percentage (less than 7 percent) of the Service's volunteer program. The Service has initiated steps, in conjunction with the National Park Service, the Bureau of Land Management, and the American Association of Retired Persons, to make volunteer opportunities with Federal natural resource agencies better known to this age group.

The volunteer program is expected to get increased emphasis in FY '86 and beyond as more Service personnel realize the potential of the volunteer program for getting the job done.

Service efforts to expand the volunteer program will be assisted by national publicity of the "Take Pride in America" campaign which strongly emphasizes public involvement on our public lands. Intra-agency networking of volunteer talents and needs is also to be part of the "Take Pride" initiative.

The report covers volunteers working at all Service field stations and those contributing data to the Service's breeding bird surveys and the Bird Banding Laboratory.

Get hooked on fishing

National Fishing Week

June 2-8, 1986

Sy Wiley, left, Pan Metal Corporation's Director of Sales, presents Tom Smylie, Public Affairs Officer for the Albuquerque Regional Office, with an original watercolor painting of white-tailed deer featured on the back of the company's ammunition boxes. Pan Metal produced the painting in honor of the 50th anniversary of the Pittman-Robertson, Federal Aid in Wildlife Restoration program.

Service Receives Art Donation

Presentation of a watercolor painting of whitetail deer in their natural habitat to the Fish & Wildlife Service of the U.S. Department of the Interior has been made by Pan Metal Corporation, makers of PMC ammunition products. The presentation took place at the 1986 SHOT show in Houston, Texas.

The attractive painting, especially commissioned by PMC for reproduction on the back of the company's new 10-cartridge Mini-Pak centerfire ammunition box, was produced in honor of the 50th anniversary of the Federal Aid in Wildlife Restoration Act (popularly known as the Pittman-Robertson or P-R Act). The Act has provided funding for wildlife restoration and preservation in the U.S. since 1937, and official celebration of its golden anniversary will take place in 1987.

Presentation of the painting was made by Sy Wiley, PMC Director of Sales. Accepting for the Fish & Wildlife Service was Tom Smylie, Public Affairs Officer.

"America's hunters and shooters comprise one of the largest single groups of supporters of wildlife in the United States," Wiley said at the presentation. "They deserve to be proud of their financial support, both privately and through the Pittman-Robertson Act, and the thousands of hours of hard work they volunteer each year. We are proud to be a part of that group, and pleased to help kick off the celebration of 50 years of essential work made possible by the P-R Act."

In accepting the painting, Smylie said, "On behalf of the Department of the Interior, I want to thank PMC for highlighting the importance of Pittman-Robertson to wildlife conservation. I hope their public spirited example serves to remind all sportsmen—and other manufacturers as well—of the unique, productive partnership P-R represents for wildlife and the American people."

Since 1937, the Pittman-Robertson Federal Aid in Wildlife Restoration Act has provided for a manufacturers excise tax on sporting arms and ammunition (and later a similar tax was placed on archery hunting equipment). Every time a hunter buys a new rifle or shotgun, every time a target shooter purchases a box of ammunition, and every time an archer buys a new bow, they are making a direct contribution to wildlife conservation.

Funds collected under the law are distributed by the Service to State wildlife agencies for wildlife management. To date, sportsmen and women and the sporting arms industry have provided more than $1.5 billion dollars for the restoration of wildlife—an investment in the future of America's wildlife legacy.

86 Bond Campaign Underway

Acting Director Gene Hester recently announced the start of the Service's 1986 Savings Bond campaign. Jerry C. Grover from Fishery Resources in Washington has been named as the Servicewide coordinator. Grover will head a committee of regional and Washington Office coordinators to carry out the effort aimed at informing every Service employee of Savings Bond benefits. An additional goal is to increase by 10 percent employee participation in purchasing Savings Bonds through the payroll savings plan.

The 1986 U.S. Savings Bond campaign will be held during the months of May and June. Savings Bonds have changed in recent years and now offer fully competitive, market-based interest rates. In addition, Savings Bonds guarantee a minimum rate of 7.5 percent if held for 5 years; are fully backed by the U.S. Government; are exempt from State and local income taxes; and are guaranteed to double in value within 10 years.

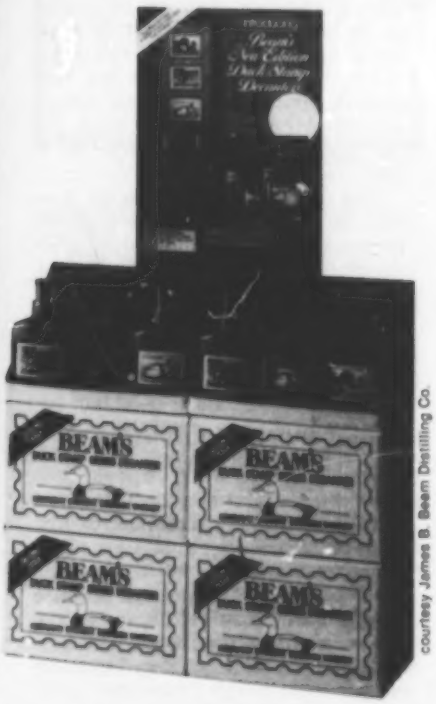
More importantly, automatic deductions through the payroll savings plan offer one of the easiest, most dependable ways to save regularly. Interior Secretary Hodel has pledged his full support of the 1986 campaign and has asked heads of bureaus to place special emphasis on this year's effort.

If you've considered joining the payroll savings plan for Savings Bonds before but hesitated because of interest rates, it's time to take another look. When a fellow employee contacts you to more fully explain the program, please listen carefully. Then join other smart savers and say "yes." You'll be glad you did.

U.S. SAVINGS BONDS

Paying Better Than Ever

Duck Stamp Agreement Nets First Donation



courtesy James B. Beam Distilling Co.

James B. Beam Distilling Co. recently became the first organization to donate funds to the Fish and Wildlife Service as part of licensing agreements on Duck Stamp designs to corporate sponsors. Here, Beam Senior Vice President Richard Reese presents the first royalty check in the amount of $36,514 to the Service's Duck Stamp Coordinator Peter Anastasi.

A Volunteer at the Best Little Check Station in California

Bill Meyer
Public Affairs
Region 1
Portland, Oregon

During the waterfowl hunting season, Mary McCollum's day starts around 4 a.m. Mary and her husband Homer, who is assistant refuge manager at the Klamath Basin National Wildlife Refuge Complex, run the Tule Lake refuge check station. Each morning the goose hunters come there to draw for blind areas, and return later in the day to report their success.

She became a volunteer for the Fish and Wildlife Service soon after moving to Tulelake, California, in 1974 from Minnesota. During her decade of service, Mary has observed a lot. Her perceptive opinions are germane now more than ever given the increasing importance of volunteers to the Service. This article presents excerpts from notes Mary has written.

WHY DO IT?

"Many people don't see past the early hours of this work and their own conceptions of 'hunters' and so feel I must be a bit crazy to do this each year.

"As far as the hours are concerned, by getting up early *every* day—not just now and then, or taking days off to sleep in—the schedule becomes routine. Dawn is beautiful on the refuge—the sunrises are often quite spectacular. During the days there are many things to observe—waterfowl, hawks, falcons, eagles, herons, ravens, owls, horned larks, sparrows, blackbirds, pheasants, coyotes, mice, and on and on.

"The weather in the basin is fascinating—always changing—fog, wind, snow, rain, clouds, sun—sometimes all in one day. One day we were treated to a constant parade of rainbows across the basin. I would never have seen them from our house in town.

Bill Meyer, Public Affairs Officer

"I enjoy meeting people and learning about them and their experiences. It has also been a great pleasure to me to become better acquainted with the refuge crew. Through hearing their shop-talk with one another, I have learned a great deal about the refuge and their work, and so can appreciate even more Homer's concerns and better understand his work. It is interesting—but not surprising—to learn how much they all care about the total refuge program."

cont. on p. 6

Volunteers

cont. from p. 5

IS MY WORK VALUABLE?

"The value of my work to the refuge is difficult to pinpoint. If this had been a salaried position, the cost would have probably been at least $2,000 for each of the last five years plus a lesser amount for the four previous years when I did the record-keeping at home. I like to think the real contribution I've made is in public relations.

"The cost to me is mainly my time and I do not qualify for any expense reimbursement. Nothing I provide for the job, such as coffee, coffee pot, etc., can be honestly claimed as deductions on our tax returns.

"I have been given two certificates of appreciation, and have been very pleased to receive them."

WHAT SHOULD A VOLUNTEER BE WILLING TO DO?

"Be there when needed—this is not always at the convenience of the volunteer. Be dependable.

"Have knowledge of the refuge system—how it is financed—where various funds come from and how they are used—stamps, licenses, ammo tax, crop and grazing lease incomes.

"Know about the local refuges—when and how established—the various programs, farming leases, refuge farming, hunting, eagles, and biological projects.

"Have knowledge of the community—the history, geography, geology, as well as local facilities such as trailer parks, dumping stations, service stations, garages, motels, restaurants, laundromats, post office, library, and other points of interest such as National Parks, museums and art galleries.

"Be interested in people as well as nature—many volunteer opportunities will likely be in visitor centers or check stations. Be as interested in the person who calls all little brown birds 'sparrows' as the one who reports sighting a gyrfalcon."

WHAT WOULD A VOLUNTEER LIKE FROM THE AGENCY?

"Be treated as individuals—not merely as 'tag-a-longs' of the employee.

"Be asked for an evaluation of one's work and of the program—the hours put in give one some insight into these matters.

"Be introduced to station employees and have the volunteer's work explained to the employees.

"Be provided a list of all station personnel and their primary duties, plus key personnel in the regional and national offices.

"Give recognition to the volunteer through local newspapers. Such notices can be used to bring attention and interest to the refuge, the volunteer program, and the staff employee who is in charge of the program."

WHAT BENEFITS CAN THE SERVICE GAIN BY COMMUNICATION WITH THE HUNTER-VISITOR?

"Talking with the hunters has caused me to realize how little time has been spent with them. I have been surprised at the number of comments from them about the friendly, helpful attitude of the employees here. They report this is a sharp contrast to the manner in which they feel they are treated on some other managed hunt areas.

"Ideally, no refuge visitor would be here without first gathering information about the place, but few people do this. Many of our visitors—and *hunter are visitors*—know very little about the refuge despite having hunted here since they were boys. THEY ARE INTERESTED!—but the information needs to be presented to them. So much of the general information usually available to hunters comes for amazingly misleading sources—often giving a one-sided view or neglecting to present the facts if they do not follow the popular beliefs.

"Ninety-nine percent of the hunters are great people. They represent many occupations—lawyers, doctors, engineers, business managers, police, firemen, military servicemen, factory workers, teachers, fishermen, salesmen—one we met sold DC-10s. Obviously, most of them are well educated and have above average incomes. They are certainly a resource for spreading our concerns for wildlife. And again—*they are interested*! Most of them are bird-watchers as well as bird-hunters. They have to be to be successful hunters, but their interest extends well beyond the game species.

"I believe meeting people as individuals—remembering their names or some other thing about them—their home town, who they hunted with, where they hunted, whether or not they got birds, what the weather was like when they were here before, makes an impression. Any visitor—anywhere—appreciates a friendly greeting and being made to feel welcome.

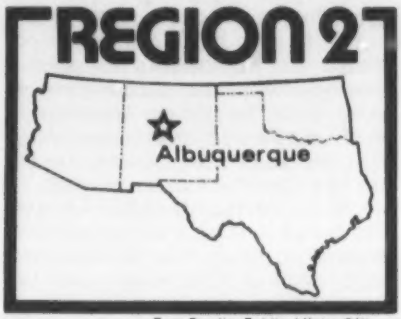
"In turn, they become more interested in the refuge, more receptive to the information we give them, and thus share more fully in the concerns for wildlife. Properly informed hunters can be a great asset to the Fish and Wildlife Service."

Mary McCollum is a treasure to, and ambassador for, the Service and the wildlife resource. The Service's Citizen's Award, the highest award which may be authorized by the agency to a volunteer, cannot equal the personal satisfaction she gets from the sunrises, the comradery with visitors and employees alike, or the daily wildlife panorama at Tule Lake NWR. We can only say thank you to the "Marys" of our ranks. We hope that the working environment we create allows them to want to continue to serve.

courtesy Klamath Falls Herald-News

Mary and Homer McCollum at work in the check station at Tule Lake National Wildlife Refuge.

Buenos Aires and the Masked Bobwhite



Larry Dunkeson
Realty Division
Region 2
Albuquerque, New Mexico

The words "unique" and "gem of the refuge system" are often overworked. But there are times when other words won't convey the meaning. Such a time is when we describe an addition to that special class of wild lands—National Wildlife Refuges.

I was surprised when Regional Public Affairs Officer, Tom Smylie, asked if I would write an article on the new Buenos Aires National Wildlife Refuge. He reminded me I had been on the project from its inception. "Write it from your own perspective," he said. "Tell about the bags of adverse letters and the remark about the dinosaurs." How could I resist?

The Biological Survey (now the Fish and Wildlife Service) first became aware of the masked bobwhite quail in the late 1800's. This close cousin of the eastern bobwhite quail was numerous only along the Mexican border in the Altar Valley of southern Arizona. The grasses were lush, food and cover were plentiful, and the masked bobwhite flourished.

But by 1900, due to heavy grazing pressure and drought, the grasses had disappeared along with the quail. By 1967, the masked bobwhite was listed as endangered.

Research and reintroduction attempts conducted in southern Arizona taught us one thing: only one site remained where the bird might have a chance of being successfully reintroduced. That site was the Buenos Aires Ranch.

Unfortunately, the owners were in business to raise cattle, not quail. After a severe drought in 1982, the ranch was sold to another cattle operator who was a good range manager but not particularly fond of masked bobwhites. With plentiful rain and able management, the Buenos Aires Ranch soon began to resemble a quail Shangri-la. Only the quail were missing.

A meeting was held to decide whether or not to save a subspecies which was extirpated from this country, and in serious trouble in Mexico. If acquisition efforts were not started soon, the masked bobwhite would disappear. I was instructed to begin the ascertainment process and write a short environmental assessment (EA) on the Buenos Aires Ranch.

At that time the Service didn't have any acquisition money for masked bobwhite habitat, and none was in the offing. Regional Director Mike Spear said "damn the torpedos, start your ascertainment and realty work. I'll worry about the money." That is where my perspective begins.

On my first visit to the ranch I was accompanied by Ben Robertson, the refuge manager at San Bernadino, a new refuge established for endangered desert fishes.

Upon our arrival at ranch headquarters, we met the ranch foreman who was opposed to our interest in acquiring the ranch. He explained man had changed the habitat markedly and he was convinced reintroduction would fail. My respect for his opinion rose when we learned that he had a bachelor's degree in range management, as well as a nearly complete Doctorate in breeding and genetics.

It didn't take long to identify a narrow strip of bottomland as prime quail habitat. The grasses and forbs were lush, the cover was thick, and water was available. It seemed a simple conservation easement should protect it. The EA was submitted to the Regional Director, but signals had changed. The landowner had made it clear he would consider nothing less than sale of the ranch.

By now we were receiving letters from people in Sasabe, the small community adjoining the ranch, and their Congressmen. Brent Giezentanner, the assistant zone supervisor, and I ventured back to Sasabe to meet local leaders.

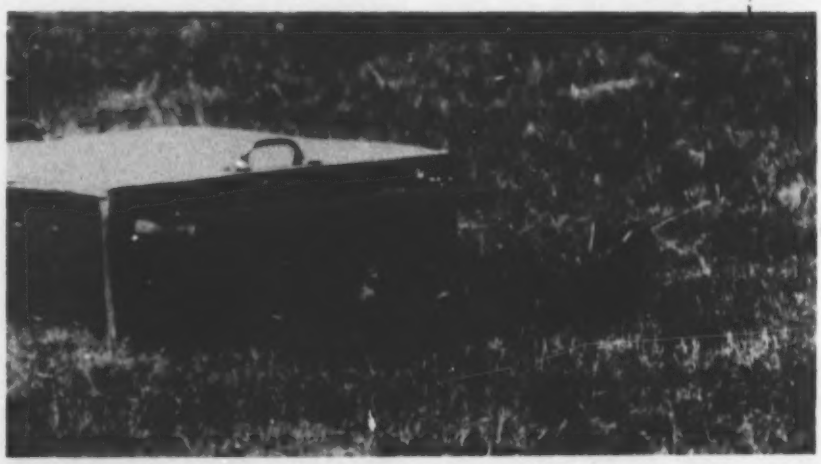
Tom Smylie, Public Affairs Officer

After we politely described why we were interested in the Buenos Aires Ranch, we opened the floor to questions. For what seemed like forever the meeting room was as quiet as King Tut's tomb. Finally, we were told we had been invited down there to tell them our plans and they would respond to us at a public meeting they had planned for a couple of months later. Surprise—we hadn't heard about any public meeting!

So we tried again, explaining that this was the historic range for the masked bobwhite and we were concerned about its future. A slim, weatherbeaten cowboy drawled, "we used to have dinosaurs here too." The only response I could think of was, "right now we don't have a source for young dinosaurs." They didn't laugh.

We then contacted appropriate Congressmen and Senators about the project and let them know we had met with the local people. Some were in favor, some neutral, and others were opposed. The Pima County

cont. on p. 8



The road to acquisition of the Buenos Aires National Wildlife Refuge as habitat for the endangered masked bobwhite quail was not an easy one. The Buenos Aires, Spanish for "good air", refuge is now a reality and stands ready to assist in recovery efforts for the quail.

Quail

cont. from p. 7

Board of Supervisors passed a resolution opposing our possible acquisition of the Buenos Aires Ranch. Their action was based on concern from the residents of Sasabe over the tax base and the local economy.

We contracted an economist with the Bureau of Land Management in Phoenix to study that question. Her study showed positive impacts. We then planned two public meetings, the first in Tucson, and the second back in Sasabe.

We received good input from the public meetings and numerous letters. The owner's continued insistence that he would consider nothing less than sale of his entire property limited our range of alternatives.

After intensive negotiations, the ranch was optioned at the appraised value of $8.9 million. The owner was pleased.

We thought we were home free. But due to growing concern over the budget deficit and the need to cut spending, acquisition of Buenos Aires Ranch came to a standstill. We spent 6 months sending briefing statements, maps, and draft decision papers to Washington. The landowner was getting impatient. There was the question of whether a quail should be afforded that amount of money when the federal deficit was continuing to climb. Letters of opposition from people in Sasabe weren't helping. Congress added $4 million to our original appropriation of $5 million to bring it up to the appraised value.

The masked bobwhite was destined to be saved. When Don Hodel became Secretary of the Interior he quickly approved the purchase. In one of the fastest closings in the annals of the Fish and Wildlife Service, we bought the Buenos Aires Ranch.

As stated at the beginning of this tale, the words "unique" and "gem of the refuge system" are often overworked. However, there are no other words that adequately describe this beautiful Sonoran Desert valley. Deer and javelina roam the foothills and bottoms while grey hawks and an occasional caracara circle overhead. In the future masked bobwhites will also scurry through the grass and mesquite trees. All of us in Region 2 believe the Buenos Aires refuge is a gem. Refuge manager Wayne Shifflett agrees. And thanks to him, even the residents of Sasabe are now beginning to realize the refuge is a benefit to their town.

Weaver Bottoms Targeted for Restoration

Art (Tex) Hawkins, Jr.
Upper Mississippi River NWR
Winona, Minnesota

Jim Ross, Public Affairs Officer

Relief is in sight for the beleaguered backwaters of the Upper Mississippi River, thanks to the cooperative efforts of State and Federal agencies working to implement recommendations of a 1970's environmental study coalition known as the Great River Environmental Action Team (GREAT).

GREAT documented a decade ago what many people already suspected: time was running out for fish and wildlife along the Upper Mississippi River. The GREAT reports showed how long-term conservation and recreation needs were being sacrificed for short-term economic gains.

The Service and other participating agencies were particularly concerned about sedimentation rates in the vast marshes and backwaters formed in the 1930's by navigation impoundments. Severe erosion from cropland adjoining tributary streams and the resuspension of sediments by river traffic and wind-generated waves were beginning to turn marshes into mudflats.

To deal with problems of sedimentation and other accumulating threats to fish, wildlife, and outdoor recreation on the river, the GREAT studies' recommendations were incorporated into management plans of the Service and the U.S. Army Corps of Engineers. Local researchers and resource managers who had helped document the problems were also instrumental in selecting southeastern Minnesota's Weaver Bottoms for the first large-scale habitat restoration effort on the Upper Mississippi.

Regarded as one of the premiere waterfowl marshes on the river, the 4,000-acre Weaver Bottoms was flooded during the 1930's when Lock and Dam No. 5 was constructed to improve navigation. For the next quarter century, fishing, hunting, and trapping flourished as the productivity of the marsh peaked.

By the 1960's a downhill trend was becoming apparent. Natural aging of the river's 26 navigation impoundments was being accelerated by on and offsite impacts. Deposition of dredged materials for channel maintenance was cutting off and filling in backwater habitats. Two severe floods in the late 60's scoured vegetation from the Weaver Bottoms, leaving relatively sterile sediments over large areas of the marsh's basin. Half of the prime fish and wildlife habitat was eliminated. The combined effects of increased current through deepened cuts from the main channel and the constant stirring action of wind and waves caused additional sedimentation and turbidity that kept aquatic plants from coming back.

It was the Corps of Engineers that came to the rescue. The St. Paul District began taking steps to turn things around. Following GREAT recommendations, the Corps, the Service, and other cooperating agencies developed a unique plan to reduce adverse impacts and prolong the life of the Weaver Bottoms.

The purpose of the Weaver Bottoms restoration effort, scheduled for implementation this summer, is to:

1) Solve the problem of dredged material disposal along the main navigation channel adjacent to the Weaver Bottoms for the next 40 years.
2) Reduce overall dredging requirements in Pool No. 5 and achieve significant cost savings for channel maintenance over the long-term.
3) Create and maintain a more diverse habitat within the Weaver Bottoms, thereby enhancing its value for fish and wildlife species.

To accomplish these objectives, the Corps will move material from historic disposal sites on islands along the river's main channel to numerous side channels that present-

ly allow sediment-laden currents to pass into the Weaver Bottoms. Most of these "cuts" will be closed entirely and riprapped to stabilize the fill. The few remaining access channels will be partially closed to allowed continued recreational boat access and unimpeded fish movements to and from the Bottoms.

The side channel closures will reduce the flow of current and suspended sediments into the Bottoms by at least one-half. The Corps will construct several specially designed barrier islands to reduce the stirring effect of wind and waves. The long-term benefit of these actions for fish and wildlife, according to project designers, will be to restore beds of submerged and emergent aquatic vegetation that have been lost over the years.

To monitor changes resulting from the project, the Service has established sampling sites throughout the Weaver Bottoms. Baseline data have gathered on hydrology, water quality, contaminants in sediments and fish, waterfowl use, and a number of other biological indicators. Sampling and analysis will continue for the duration of the project and beyond. Structural modifications will be made if early findings indicate that changes are needed.

The outstanding feature of this project is that construction resulting in habitat improvement will be accomplished by the Corps' channel maintenance program at no cost to the Service. Using Corps channel maintenance funds, secondary benefits to the Service can be realized while actually saving the Corps—and U.S. taxpayers—several million dollars in operating expenses over the life of the project. The savings are projected because, with increased main channel current to move sediment downstream, less dredging will be needed and materials that are dredged will not have to be moved as far.

The importance of the Weaver Bottoms and the need to maintain the area's vitality cannot be overstated. Last November, 11,000 tundra swans made their traditional refueling stop at Weaver Bottoms to feed for several weeks on high-energy arrowhead tubers. In the deeper water just beyond the hooting mass of swans, 20,000 canvasbacks were rafted, diving to feed on submerged wild celery beds. Watchful bald eagles perched nearby on dead snags while other raptors wheeled over the bluffs. People flocked in too, from Minneapolis, Madison, and Mason City to watch the spectacle from overlooks on Highway 61.

The Upper Mississippi River National Wildlife and Fish Refuge has never attracted much publicity, lacking a major visitor center or single point of entry. Yet it does attract an estimated three million water-oriented visitors each year who enter the refuge, usually without knowing it, through about 280 landings and access points administered by numerous public agencies and private interests. The estimated visitation does not include the additional millions of people who enjoy scenic views of the refuge and wildlife sightings while traveling in four States along the boundaries of the 260-mile long refuge. The Mississippi Valley and its lush backwaters represent one of mid-America's most exciting landscape features and a great continental migration path for waterfowl. It is also traveled by many species of songbirds that winter in the tropical forests of Central and South America.

The master planning of the refuge, scheduled for completion next year, is documenting the importance of this vast resource. New management strategies will be proposed to protect the backwaters from off-refuge impacts. The Weaver Bottoms project will certainly prolong the life of the marsh by dealing with the problem of current-borne sediments from the river's main channel. In order to deal with the long-range effects of sedimentation, the problem has to be tackled at its source. Erosion must be controlled along the Mississippi's tributary streams. Refuge staff members are now working with counterparts in the U.S. Department of Agriculture and State conservation agencies to determine how provisions of new farm legislation may be applied to reduce erosion and benefit fish and wildlife. The Whitewater River, which empties into the Weaver Bottoms, has been targeted for a pilot outreach effort.

According to the joint report of the Service and the Corps, the Weaver Bottoms project represents a unique opportunity to integrate the management of commercial navigation with the management of fish and wildlife to the mutual benefit of both interests. It is described as a project of national significance that can serve as an example for future endeavors. The cooperating Federal and State agencies have determined that using dredged material for rehabilitating Weaver Bottoms is economically justified, and provides a balance of economic, environmental, and social values that is in the best public interest. This is good news for the Upper Mississippi River!

A barge journeys up the main channel of the Upper Mississippi River past one of the major inlets to the 4 thousand-acre Weaver Bottoms. The area encompasses significant wildlife habitat and is destined for improvement through a project by the U.S. Army Corps of Engineers, the Service, and other interests.

SPECIAL

FISH AND WILDLIFE PUBLICATIONS AND COMMUNICATIONS

"Ummm. . . . I Think You Ought To Call . . . ."

There are few things more maddening to the public (or to members of the press or Congress) than to be told by a Service employee: "I've never heard of that publication before." That exasperation increases when they're advised that it *may* exist but it's certainly not in *this* office so-why-not-call-elsewhere or possibly. . . .

The Regional Office in Denver recently advised Washington that it was receiving an increasing number of frustrated referral calls from around the country from public inquirers who were told to "call Denver." Perhaps the intent of the referring Service staff person was to put the caller in touch with the Office of Information Transfer in Ft. Collins—though, strictly speaking, that office is not geared to respond to direct public inquiries for publications, but rather to in-Service requests.

If you receive a call from the public inquiring about a Service publication, try—as politely as possible—to determine if it is indeed a Service publication they are seeking and as much pertinent data as possible about it. *Then*, if you do not have the publication at your regional office or field station, either offer to locate the publication and send it to them (you can learn more about the publication yourself this way) or—depending upon the topic—refer them to one of the offices identified in the articles elsewhere in this issue.

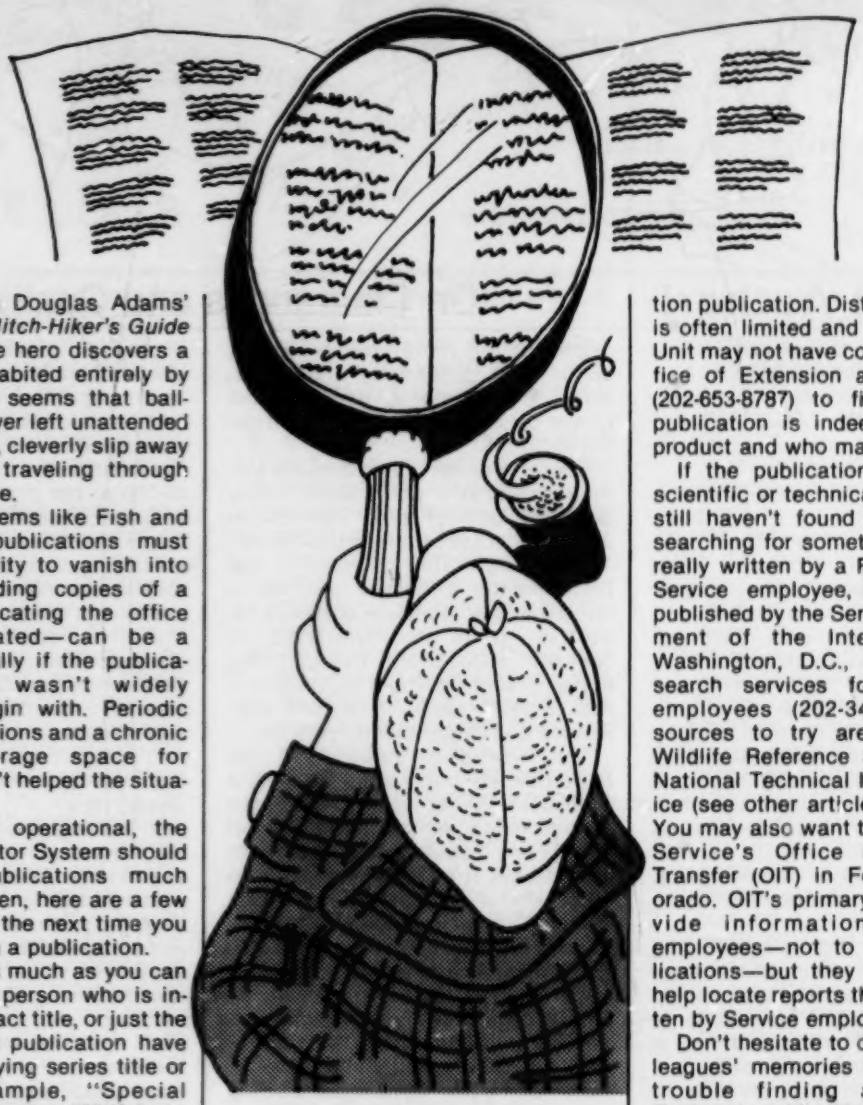
Some of the publications people will ask about will indeed have a Service identification on them and despite your best detective work, you will likely be unable to track them down. There can be several reasons for this: they could be publications that are long out of date and thus not readily retrievable from current locator systems; or they may actually be a State extension publication (pg. 18) funded by the Service but carried as a stock item only by the State in question.

The key point to keep in mind is that the public expects help and deserves courtesy; not only that, they pay the Service a great compliment when they call upon us for information and publications. Let's work to maintain the goodwill we have spent years building. Even if we can't locate the precise publication they may want, it is still our duty to be helpful and courteous.

A quick dismissal or sloppy referral of a public inquiry actually lessens the effectiveness of the Service in its resource work. To be sure, some inquiries are difficult to track down; some, in fact, will require a good deal of effort on your part. But until that day when we can merely tap in a title on a computer and know instantly where we can get the information and publications the inquirer wants, then patience, diligence, and courtesy need be the key words of the day. ■

Illustrations By Cathy Waters

Sometimes, A Little Detective Work



At one point in Douglas Adams' fantasy novel "*A Hitch-Hiker's Guide to the Galaxy*," the hero discovers a planet that is inhabited entirely by ballpoint pens. It seems that ballpoint pens, whenever left unattended for a few moments, cleverly slip away to the planet by traveling through wormholes in space.

It sometimes seems like Fish and Wildlife Service publications must also have the ability to vanish into outer space! Finding copies of a publication—or locating the office where it originated—can be a challenge, especially if the publication is old or wasn't widely distributed to begin with. Periodic agency reorganizations and a chronic shortage of storage space for publications haven't helped the situation.

When it's fully operational, the Bibliographic Locator System should make finding publications much easier. But until then, here are a few suggestions to try the next time you have to track down a publication.

First, find out as much as you can about it. Does the person who is inquiring have the exact title, or just the subject? Does the publication have any kind of identifying series title or number—for example, "Special Scientific Report Number 300"? Does the person know the date of publication or the name of the author? Does the citation list just the Fish and Wildlife Service, or are the names of other agencies also listed?

Once you've collected as much information as you can, call the Publications Unit in Washington, D.C. (202-254-6306). The Publications Unit stocks many of the Service's publications, from refuge leaflets and general interest pamphlets to Research and Development (R&D) reports. The Publications Unit also has some folks on staff who've been with the Service for a while and may recognize older titles that are no longer in circulation. (It's surprising how often you may get requests for publications that were issued 20 years ago, or more, or that were put out by the former Bureau of Commercial Fisheries before that agency was transferred to the Commerce Department.) R&D series not stocked at the Publications Unit can be obtained from the offices listed in the R&D publications article elsewhere in this issue.

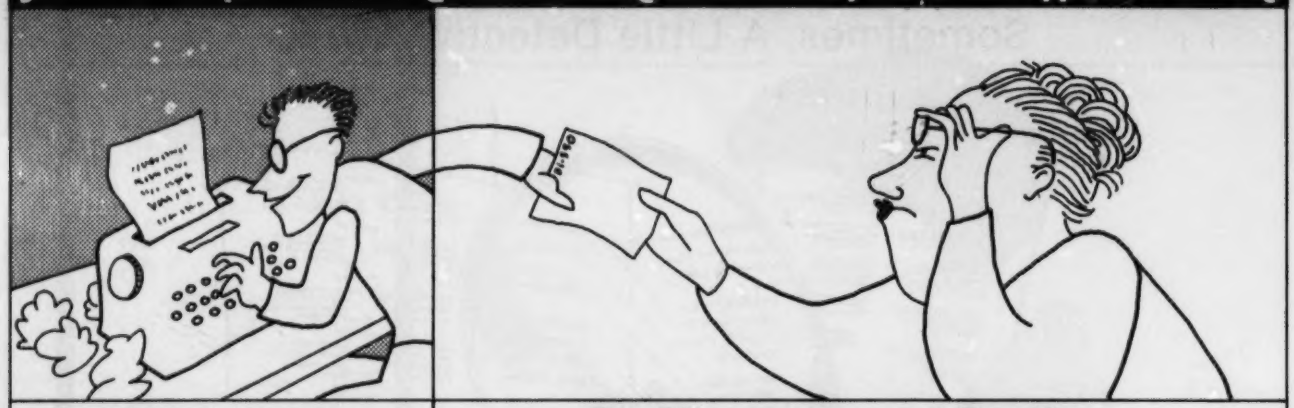
If the publication in question was done by the Fish and Wildlife Service in cooperation with a State—especially a State extention service—it may be an extension education publication. Distribution of these is often limited and the Publications Unit may not have copies. Call the Office of Extension and Publications (202-653-8787) to find out if your publication is indeed an extension product and who may have copies.

If the publication sounds like a scientific or technical report and you still haven't found it, you may be searching for something that wasn't really written by a Fish and Wildlife Service employee, or that wasn't published by the Service. The Department of the Interior library in Washington, D.C., offers literature search services for Departmental employees (202-343-5815). Other sources to try are the Fish and Wildlife Reference Service and the National Technical Information Service (see other articles in this issue). You may also want to check with the Service's Office of Information Transfer (OIT) in Fort Collins, Colorado. OIT's primary duty is to provide information for Service employees—not to search for publications—but they may be able to help locate reports that were not written by Service employees.

Don't hesitate to draw on your colleagues' memories if you're having trouble finding a publication. Regional publications coordinators are good sources to try. Please remember, though, that locating publications is *not* their main job. Public affairs officers may also be of help.

In most cases you will have found your publication before you've had to go through all these steps. For the small number that still can't be located, you'll just have to apologize to the inquiring citizen. Promise to get in touch with him or her if you do manage to find the publication. And don't forget to write down the person's name and address, just as soon as you find that ballpoint pen you thought you left on your desk. . .■

S P E C I A L



Author! Author!

Who actually writes all the publications that the Service produces? You do! Almost every component of the Service produces some editorial product (be it a booklet, brochure, technical article, etc.).

In recent fiscal years, the Research and Development program has been the most prolific performer—with more than 1,000 titles per year (ranging from one-page articles in scientific journals to brochures and booklets). But writing is part and parcel of R&D's work—reporting their findings to Congress, the public, and the scientific community.

Refuges has long been a mainstay in the publications process. Nearly all the 435 National Wildlife Refuges have descriptive brochures; and a few refuges may have several specialized publications—bird lists, canoe trail guides and the like—for increasing enjoyment and understanding of the resource.

Every region and program has specialized publication needs from time to time. These needs are occasionally met by staff specialists or public affairs officers. Sometimes, a need will arise for a publication, but there will not be anyone available to prepare the manuscript.

In recent years, it has been very cost effective to secure hired writing talent to prepare special publications. But not just anyone can be contracted with for writing—writers must first be placed under a special purchase agreement. To learn more about this, contact your Public Affairs Office in the Regional office.■

On Clearances and Quality

One of the more vexing aspects about both publication and audiovisual production is securing the proper clearance to go ahead and get the job done.

Many times Service employees ask their supervisors point blank: "Why does my booklet even have to be cleared? I'm the expert on this topic!" True enough. The purpose of the Departmental clearance process is not to call into question anyone's expertise—it is not intended to "censor" publications, though rarely it has brought to light publications that weren't really in accord with Service and Departmental policies.

The overriding purpose of the Departmental publication clearance form, better known as the DI-550, is to provide managers with a handle on what is being published, both content and volume; it also provides data on unit costs for various outreach efforts and fulfills the Department's requirements under OMB's circular A-3.

What publications are subject to Departmental clearance? Virtually all publications, listed under Departmental Manual Chapter 470 DM 1.3b. In reality, however, neither the Department nor the Service have the staffing and funds available for exhaustive clearances and reviews of all publications, so "blanket" clearances are prepared on an annual basis estimating cost and number of projects in certain continuing publication categories where policy implications are slight. An excellent example is the visitor leaflets produced for distribution at the national wildlife refuges or fish hatcheries. Also granted a nearly automatic blanket clearance are the Extension publications funded under the Smith-Lever act that are not attributed to Interior or the Service but to the State or university that received the Smith-Lever grant. Most technical and scientific publications are also cleared in this manner, but—and this is an important exception—popular and semi-technical publications based upon the initial documents are not exempt and must come in for the DI-550 review process.

The process at times has its critics. Everyone likes to get a job done quickly and efficiently with no one looking over his shoulder. But the 550 review has demonstrated its worth to the Service and Department over the years by identifying in advance (i.e., before time and money have been expended) those publications that were duplicative, overly costly, or treading into policy or content areas not clearly within the realm of the Service or Department.

In the larger view, the 550 process has been a very effective and economical review mechanism to provide assurances that we will produce the best publications possible for the money available. Stated another way, the Service is fortunate that it has so few "horror stories" involving unwise, frivolous, or extravagant publications. That's something we should all keep in mind when we get ready to start a publication.

The 550A and 550 forms that the regional publication coordinators deal in are for the protection of efficiency, economy, and credibility. True, your publication may be slowed up by several days to even a few weeks; but when it does see the light of day, it will have gone through a review designed to make sure it will be the best publication possible, and a credit to your agency and you.■

—The Editors

Some Publications Terms Defined

The world of government publications can seem daunting to new employees and those preparing their first texts. Below is an alphabet of some key terms and ideas to help you understand some of the basics of your publication process:

A is for approval; all publications will require it in some form or another.

B is for brevity; the best Service publications are to-the-point, no wasted words.

C is for color; which always requires special approval.

D is for DI-550, the form that must be filled out and signed off by your supervisor; the publications coordinator; the Assistant Director for Public Affairs; the Office of the Director and the Office of the Assistant Secretary before it can be routed to the Secretary's Office of Public Affairs for approval, in concept *only*, that is. There are subsequent approval steps too.

E is for excellence; which is why the approval process is in place.

F is for fiscal restraints; don't plan any publications unless you've determined a valid *public* need.

G is for GPO, Government Printing Office, the Federal Government's primary publisher and book dealer; this is where the public should turn to buy available Service books.

H is for help; in the publications process, you shouldn't shy away from asking for it. In responding to public inquiries, you should always be quick to offer it.

I is for illustrations that can liven and illuminate your text. Advice on illustrations, whether art or photographic, can be obtained from regional publication coordinators or from the Audiovisual Office in Washington.

J is for JCP, the Joint Committee on Printing; an organization established by Congress to assure economy, efficiency, and quality in government publications.

K is for knowledge; which is what we should seek to impart with Service publications, not opinions.

L is for laws. Be aware of them and obey them; don't use copyrighted photographs or other materials without securing permission first; do not plagiarize from other sources; do not provide government endorsement for products, goods, or services.

M is for manuals; such as the Government Style Manual, also the Service and Departmental manuals describing what the rules of publications are.

N is for *now*, the most important word in your printing process; it applies, however, only to you . . . as in "I will sit down and finish that chapter *now*." *Not* as in "I want you to sign that print authorization form now." (We think you understand.)

O is for obligation; a term with many meanings: publishing is an obligation of the Service under several of its enabling laws; you, the writer, have the obligation to prepare your best manuscript; when all goes well, the Service will make an obligation of funds to print your publication.

P is for public domain; which means that Service publications carry no copyright; they belong to the public, not to you alone. The information in our publications may be reproduced, in whole or in part, without special permission.

Q is for quality; something we always strive for—you might even apply this simple test—is this book good enough to be compared with National Park Service publications?

R is for readability; what good is a publication that is difficult to read? If your readers become irritated with your writing, how have our resources been served?

S is for Superintendent of Documents; the selling branch of GPO.

T is for timeliness; a publication should address a current public need rather than merely fulfill the writing wishes of its author.

U is for uncluttered; this is what your approach, your thinking, your writing, and your manuscript should be.

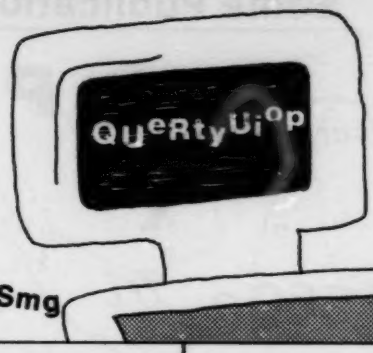
V is for veracity; the public looks to Service documents for impeccable authority and uncompromised accuracy.

W is for window; Service publications present a window on the natural world for increasingly urban readerships; thus, these documents must strive for accuracy, quality, and appeal—if a reader closes our window, it may be a long time before he again glimpses into the natural world.

X is a well-known brand of commercial photocopier; which, by the way, you should not use to copy copyright-protected books and documents; you may, however, use a copier on the Service's public domain materials to send out to inquirers if time and cost allow.

Y is for youth; let's not forget that many of our readers are young; let's work to make the text readable and the topic learnable.

Z is for zeal; something we should evince for the resource and for our publication in progress; zeal should not be allowed to devolve to zealotry, however—our eagerness for the resource should always be matched by good sense in serving the public at large. ■



An Evolving Solution: The Bibliographic Locator

Have you ever tried to find a publication that was produced by the Fish and Wildlife Service? Have you ever wondered where you could get a copy of a specific publication or find out how many might be on hand? If you have, you're not alone. Unless you are very lucky, resourceful, or both, you probably didn't find the answers to these questions easily.

Fortunately, things are about to change. The Service is developing a computerized system which will answer not only these common questions but a lot more. The system is not exactly new—it's been in development for about 3 years. And while most of the "bugs" have been worked out of the system, the bibliographic locator is temporarily only about 75 percent operational.

For example, at present, only three people can access the file at the same time because the locator is now housed in a small minicomputer; but plans call for this equipment to be upgraded to a larger unit which will support at least 50 individuals at the same time. Another current limitation: there are 2400 records in the system—not very many when you consider that the Service has been publishing hundreds of pamphlets, scientific reports, and journal articles each year for decades. But records are being entered into the system on a daily basis so the list will continue to grow, if not swiftly, then steadily.

The main programming goal is to input information on the most current publications first and work backwards—adding older publications as time allows. In this way, we can provide interested parties with a variety of information concerning Service publications that are in print now or that will be in print in the near future.

There's one other question that may have been asked: What kind of publications will be entered into the system? About the only publication types that will *not* be included are administrative materials such as manuals, memoranda, forms, etc. The bibliographic locator *will* include bird lists, refuge and fish hatchery leaflets, scientific and technical publications (including articles published in journals), extension education materials, and all publications that are distributed to the general public.

You will be kept up to date on the status of the locator as it progresses. If you want or need additional information in the meantime, contact your regional publications coordinator or Current Information—Publications in Washington. ■

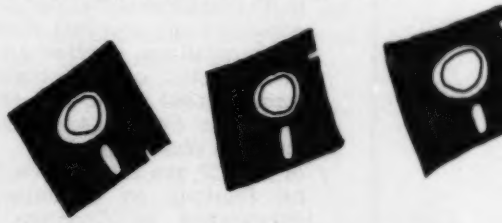
Computerized Retrieval: The Fish and Wildlife Reference Service

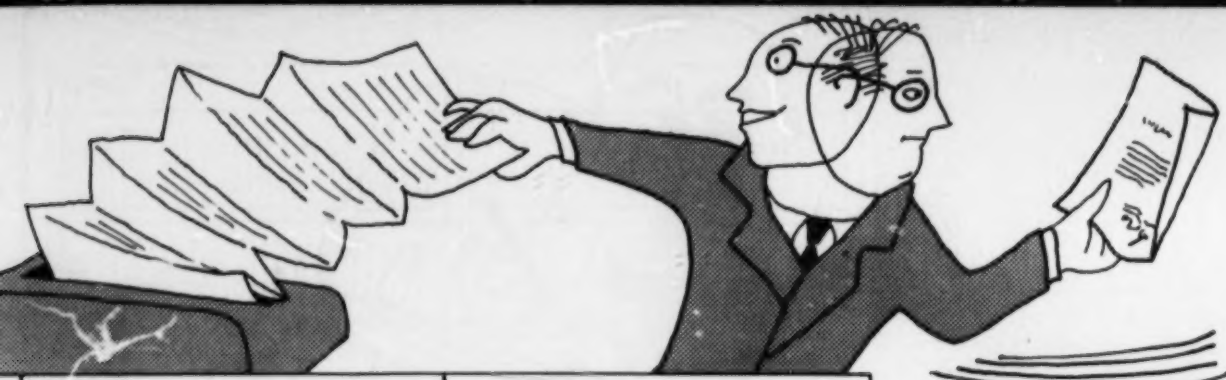
The Fish and Wildlife Reference Service (FWRS) is a commercial computerized information retrieval system and repository that provides research information to biologists, management personnel, and the general public. Established in 1965 primarily to store and retrieve documents produced under Federal Aid in Fish and Wildlife Restoration Program funding, the reference service indexes and accesses reports from other Service offices as well. Other reports include those prepared about the Anadromous Fish Conservation Program, the Endangered Species Grants Program, and the Cooperative Fishery and Wildlife Research Units. The FWRS is the only reference service that works directly with the U.S. Fish and Wildlife Service.

Who can utilize FWRS and what services are available? Anyone is welcome to make requests of the reference service; however, there are charges involved for some services provided. FWRS has two fee structures: 1) for cooperators—personnel of State fish and wildlife agencies, the U.S. Fish and Wildlife Service, and the Cooperative Fisheries and Wildlife Research Units; and 2) for other clients—non-Federal agencies, organizations, companies, or university personnel or private citizens. Services available from FWRS include:

- Computerized literature searches
- Technical reports in hardcopy or microfiche
- Fish and wildlife thesaurus
- Indexes of fish and/or wildlife research being conducted by individual States
- Quarterly newsletter
- Comprehensive searches of the Current Federal Aid Research (CFA) data file
- Repository for lead shot/steel shot information
- Referral to alternate information sources

The Fish and Wildlife Reference Service accesses two databases under contract from the Division of Federal Aid. The first, DIALOG file 920, contains Current Federal Aid Research (CFAR). This includes State

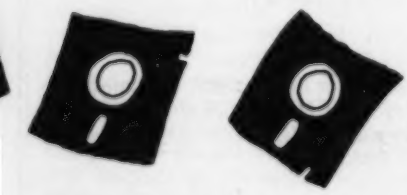




fish and wildlife research studies currently in progress which are funded by the Federal Aid in Sport Fish Restoration (Dingell-Johnson/Wallop-Breaux) Act and the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act. The purpose of this database is to provide readily retrievable information pertaining to current research activities being conducted by State agencies. File 920 is used as a source of information when published information is not readily available. The requester, in turn, is able to contact people working on similar problems or related species, as a means to obtain technical information or advice.

The second database, DIALOG file 957, includes indexed documents from the Federal Aid in Fish and Wildlife Restoration Program, the Anadromous Fish Conservation Program, the Endangered Species Grants Program, the Cooperative Fisheries and Wildlife Research Units, and State fish and wildlife agencies. The documents include reports, published papers, technical publications, theses, and special materials such as endangered species recovery plans. File 957 was recently updated and currently contains over 16,000 records.

For more information about the Fish and Wildlife Reference Service or to add your name to the mailing list to receive their newsletter, write or call: Fish and Wildlife Reference Service, Informatics General Corporation, 6011 Executive Boulevard, Rockville, Maryland 20852, telephone, 800-582-3421 or (301) 770-3000. ■



A Clearinghouse

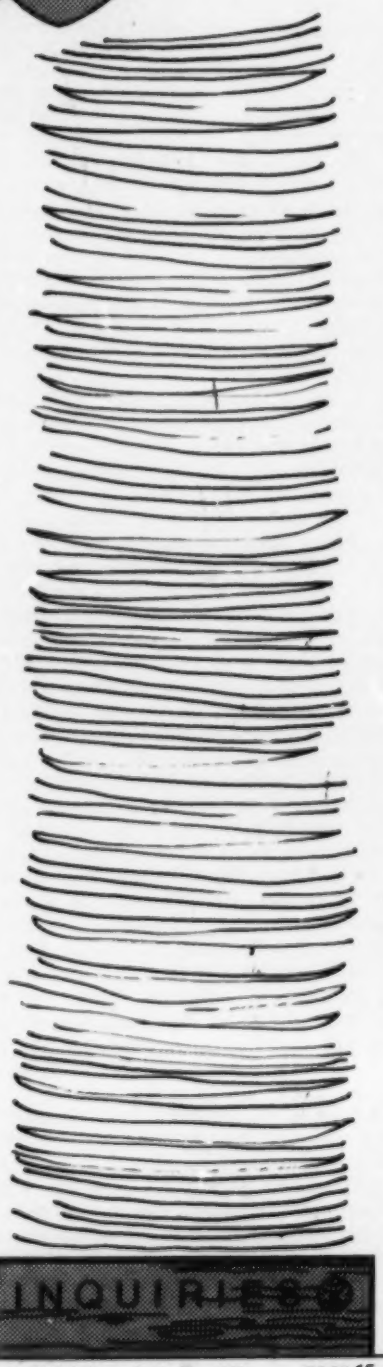
The Publications Unit responds to over 100,000 inquiries per year regarding published material—undoubtedly the most valuable service provided, according to other Service personnel. On a typical day, 100 pieces of mail reach the unit, but when news of an available publication gets out or something stimulates the public, the mail arrives by the sackful. To respond to this monumental flow of mail, the unit stocks some 976 different printed products. (When sufficient space is made available, the Publications Unit will provide a depository for all R&D publications as well.)

The products vary from form letters about employment with the Service to the most scientific and technical publications of R&D. When staff cannot answer requests for information with a product in stock, they refer these inquiries to an appropriate Service office for direct response.

Automation of the Publications Unit is planned in the near future, and the Service will then have a real-time inventory of all items in stock, as well as a record of all incoming requests and their disposition. As an expected result of this needed upgrading, the Service can better determine what material to produce in order to best serve the public. Through automation, the unit staff can also decide when to restock a product.

The unit's three person staff works closely with Public Affairs, particularly the Publications Management Office. The Publications Unit automation is to be completed as a part of the "Bibliographic Locator System".

Any inquiries regarding other services provided should be addressed to the Associate Director for Research and Development, Publications Unit, U.S. Fish and Wildlife Service, 18th and C Streets, N.W., Washington, D.C. 20240 or call at 202/254-6306. ■



S P E C I A L

R&D Publication Management

Research and Development (R&D) is a critical function in the Service, keeping abreast of changing problems in fish and wildlife resource management, conducting basic and applied research to meet Service program needs, and meeting information needs of Service biologists, managers, and the natural resource community.

Toward this end, approximately 135 R&D facilities produce a variety of publications, ranging from scientific monographs to publications for targeted lay audiences.

Research and Development authors have produced over 4,000 publications since 1982. Approximately 85 percent are published annually in scientific and technical journals, proceedings reports, books, magazines, and Federal and State outlets. The remaining 15 percent appear in the eight series published by R&D: *North American Fauna, Fish and Wildlife Research, Fish and Wildlife Technical Report, Fish and Wildlife Leaflet, Fish Disease Leaflet, Investigations in Fish Control, Resource Publication*, or *Biological Report*. In addition, R&D sponsors the publication of *Progressive Fish Culturist* in cooperation with the American Fisheries Society. R&D also produces the quarterly indexing publications, *Wildlife Report* and *Fisheries Review*. These are available to Service employees for customized literature searches through batch processing.

Biological Report, Fish Disease Leaflet, and the *Investigations in Fish Control* series are managed by the Division of Biological Services, the National Fisheries Center/Leetown, and National Fishery Research Laboratory/LaCrosse, respectively. The Office of Information Transfer directly manages all other R&D series.

Publications management responsibilities for all R&D publications and printed products reside with the Office of Information Transfer. This office assists R&D facilities in establishing and maintaining an efficient and cost-effective publishing program. Here, policies and operating procedures and standards are established and assistance is provided in editing manuscripts, obtaining Service and Department printing approvals, determining distribution strategies, writing, and designing and evaluating the final product.

Publications management is a dynamic function within R&D, changing as needed to maintain an efficient and cost-effective transfer of R&D written information.

Copies of R&D Series publications (except *Biological Reports, Fish Disease Leaflets*, and *Investigations in Fish Control*) are available from two sources:

U.S. Fish and Wildlife Service
Publications Unit
Matomic Building, Room 148
Washington, D.C. 20240
(202) 254-6306

NTIS
Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4600

Biological Report publications are available from:

Western Energy and Land Use Team
Drake Creekside One Building
2627 Redwing Road
Fort Collins, CO 80526-2899
(303) 226-9300
FTS: 323-5300

National Coastal Ecosystems Team
1010 Gause Boulevard
Slidell, LA 70458
(504) 646-7310
FTS: 680-7310

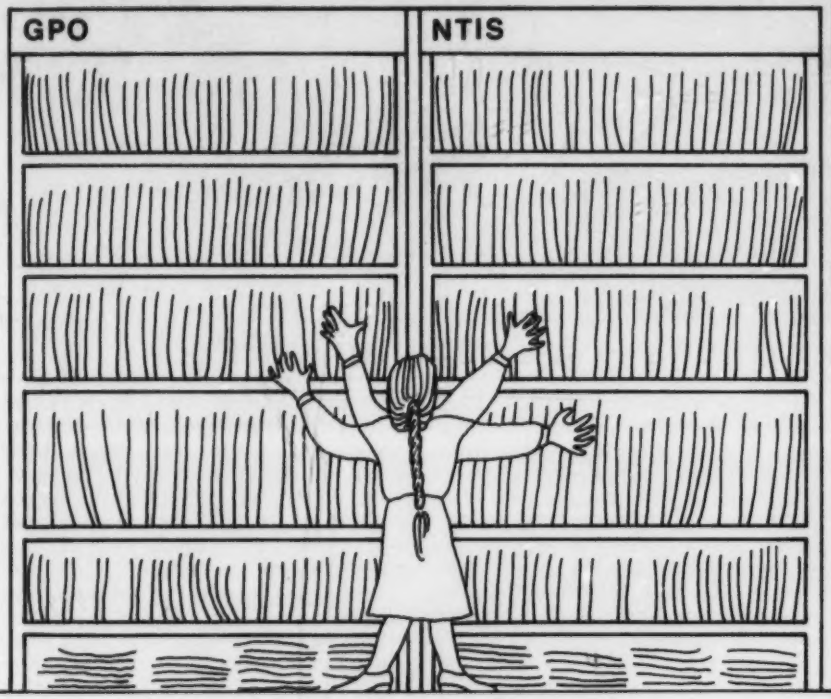
Fish Disease Leaflets are available from:

National Fisheries Center/Leetown
Technical Information Services
Box 700
Kearneysville, WV 25430
(304) 725-8461
FTS: 925-5212

Investigation in Fish Control publications are available from:

National Fishery Research Laboratory/LaCrosse
Office of Technical Information
P.O. Box 818
LaCrosse, WI 54602-0818
(608) 783-6451
FTS: 364-3210

For further information or assistance in locating R&D publications call Tom Cortese (FTS: 323-5236 or (303) 491-6635). ■



On a More Technical Note

What do you do when you receive an inquiry or you yourself need one of the technical publications produced by the Service? To a large degree, the amount of technical information contained in these documents can provide a good clue as to where they might be available. Two of the basic sources for scientific-oriented publications are the Government Printing Office (GPO) and the National Technical Information Service (NTIS).

If a publication is of a general nature and likely to be of interest to the public, chances are GPO may well stock it. If the item is more along the lines of a scientific research document, NTIS will probably have it. Both sources charge for publications.

The Government Printing Office, under the Legislative Branch, executes orders for printing and binding placed by Congress and virtually all departments of the Federal Government. In addition, it sells publications by mail and through a network of nearly 25 GPO bookstores located in major cities throughout the country. It also administers the depository library program through which selected publications produced by the government are made available to the public at libraries scattered across the country.

In general, publications handled by GPO are likely to be of a more popular nature and of interest to the public, but some technical or scientific publications are also carried. Inquiries concerning publications and other informational materials available through GPO should be directed to: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. The telephone number is 202/783-3238.

A separate agency, the National Technical Information Service within the Department of Commerce, was established to handle and make available to the public the rapidly burgeoning amount of technical information produced by governmental agencies. NTIS is the central source for the sale of government-sponsored research, development, and other types of scientific information. At present, the NTIS collection exceeds 1.5 million titles and an estimated 80 thousand reports are added each year. The agency is supported solely by the sales charges for the information it supplies. For further information, contact: National Technical Information Service, Department of Commerce, Washington, D.C. 20230. The telephone number is 703/487-4600.■

Publication Coordinators

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Albuquerque, New Mexico 87103
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FTS: 776-8150

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U.S. Fish and Wildlife Service
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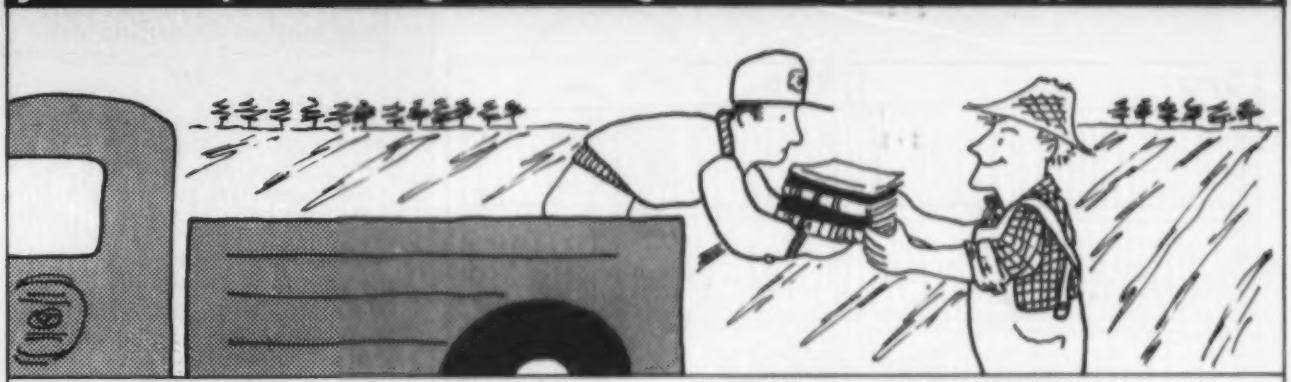
Anchorage, Alaska 99507
FTS: 907/786-3337

Region 8
Tom Cortese
U.S. Fish and Wildlife Service
Office of Information Transfer
2629 Redwing Road
Fort Collins, Colorado 80526
FTS: 323-5430

S P E C I A L



Extension Publications — A Cooperative Effort

Most of us are aware the Service participates with U.S. Department of Agriculture's Extension Service to provide useful, practical information on fish and wildlife to landowners and the general public. But many in the Service just aren't aware of the "how" of our extension involvement.

The Service's official involvement with the Extension Service dates from a 1978 memorandum of understanding that enables the Service to cooperatively produce and provide suitable extension-type materials through their communications network to land grant universities in 50 States and the territories, plus more than 3,000 local offices affiliated with the Extension Service. In the Fish and Wildlife Service, administration of extension-related efforts is carried out by the Office of Extension and Publications (EXP) under the Research and Development Program, in the Washington office.

Service involvement with Extension has created some confusion from time to time among various offices—with the usual questions surfacing: "Are these Service publications?" "Where can our office requisition a few hundred copies?" or "Where do these come from—who sets the publication priorities?" They are all good questions. But what has proven a little vexing to many Service employees is that there is not a crisp, clean categorical response to the above. Instead, as the EXP office explains, it all depends on where and how the publication is produced.

Extension publications and audiovisuals the Service agrees to fund (and in some cases produce) are part of our annual commitment in support of the Extension Service. Under the Smith-Lever Act, the authorizing legislation from 1914 that created the Extension effort, the Federal Government provides needed funding to States for the dissemination of factual information to farmers, landowners, and other publics. The mission is to direct reliable, useful information in a timely fashion to those who can put it to greatest use. After all, more than 70 percent of the Nation's wildlife habitat occurs on privately owned land. And the State Cooperative Extension Service aims to provide the public with up-to-date practical information to help people manage their lands for fish and wildlife.

The Fish and Wildlife Service's participation—like that of other Federal agencies outside the Extension Service—is as a modified grant source. The Service and Extension negotiate major information needs and goals—with priorities chosen by the program managers. The yearly roster of projects reflects both Service initiatives and national information needs identified by Extension (remember, they're the folks with 3,000 plus offices "out there"—they *know* what the public is asking for).

In these times of heightened budget awareness, many might worry that the Service is—in effect—"losing control" of a publication or other information effort via its funding support to Extension. At first glance, this is indeed an understandable concern. But if the long term goal is kept in mind—to deliver factual information in a timely manner to an audience that has high potential impact on resource use—then the extension outreach qualifies as a sound investment: the Service is directing limited funding (approximately $250k in recent fiscal years) to projects that deliver maximum effect to a target audience. Further, the State Extension cooperator often contributes as many or more dollars as we do to a cooperative project.

The individual State cooperator is frequently the project leader on an extension publication—with all the attendant responsibilities for audience selection, mailing, inventory distribution, etc. If Service offices need copies of a publication, they may contact the State Extension source directly; or, if unsure as to what States may be involved, they can contact the EXP office to obtain the annual listing, a veritable shopping list, of extension publications—where they can be ordered and when they were produced. Remember though, the target audience for extension products is usually private landowners and/or youngsters through Extension's 4-H program. While extension publications are usually (though not always) authored by State or extension personnel, there are frequently Service staff involved in writing and editing as well as project review. Almost all extension publications produced "in-house" by the Service are written by staff in Research and Development, either at labs or in the Office of Information Transfer (OIT).

The management of data bases for extension and other publications has become increasingly important in the past few years (see article on publications management and the bibliographic locator, page 14), as the Service continues its efforts to make its publications more useful and accessible to the public. In the future, brief catalogs of extension publications will be available for Service use—to help field stations, and other offices get information they need, or the public wants, in the quickest possible manner.

In the meantime, if you have any questions about the Service's efforts in extension, give the EXP office in Washington a call at FTS 653-8787. Duncan MacDonald is the office chief, Dan Stiles is the wildlife specialist, and Joe McCraren handles fisheries. They'll be glad to help you. ■

Busy shipping activities at the Savannah Harbor contrast sharply with the tranquil setting of the adjacent Savannah National Wildlife Refuge. Proposed expanison of the harbor poses a threat to the rich variety of wildlife hosted by the refuge, like this 12-foot alligator sunning on the banks of one of the refuge's 18 freshwater impoundments.

Don Pfitzer, Public Affairs Officer

Harbor Impacts at Savannah Refuge

James D. Brown
Habitat Resources
Atlanta, Georgia

Just across the river from Savannah National Wildlife Refuge lies the colonial city of Savannah, the birthplace of Georgia. It is also one of the busiest seaports on the South Atlantic Coast. Like many of the Nation's ports, harbor growth and expansion are believed to be vital to Savannah's future. And therein lies the most immediate threat to the refuge's fish and wildlife resources.

In late 1985 work began on the Service's Lower Savannah River Study. This study is designed to determine the impact future development at Savannah Harbor could have on the fish and wildlife of adjacent Savannah refuge, and evaluate the effectiveness of potential mitigation measures. It includes development of a habitat/successional model, an analysis of past vegetational changes, an investigation of impacts on the spawning and nursery habitats of striped bass, and a survey of contaminant residues. Participating Service research elements are the Florida and Georgia Cooperative Fish and Wildlife Research Units, the National Coastal Ecosystems Team, and the Columbia National Fishery Research Laboratory.

The Savannah refuge, part of the Savannah Coastal Refuges complex, is a 26,500-acre tract of prime wetland and riverine habitat located about 20 miles inland on the lower Savannah River astraddle the South Carolina—Georgia border. Here history and nature come together in a unique and appealing setting. The refuge was established in 1927 from lands that once were part of vast 19th century rice plantations. It encompasses hardwood swamps, freshwater and brackish marshes, and tidal creeks and rivers. Some 3,000 acres of former rice fields are managed intensively as freshwater impoundments for wintering waterfowl, shorebirds, wading birds, and other wildlife. On warm sunny days, the canals, ponds, and dikes once used for rice production seem to be virtually covered with alligators. Braided river channels flowing through the refuge are considered to be the most important spawning habitat for striped bass in the entire Savannah River drainage.

The dredging for deep navigation channels and basins has resulted in an upstream movement of salt water. Installation of a tide gate in the lower river in 1977 by the Corps of Engineers pushed salt water even further upstream. As a result, bluefish, seatrout, and other saltwater species can be found today where largemouth bass and bluegill occurred only a few years ago, and freshwater marsh plants are being replaced by brackish species less desirable for waterfowl management. As a mitigation measure, the Corps constructed an upstream diversion canal to supply the fresh water needed for management of the refuge's impoundments.

Unfortunately, this water supply has not been reliable, and salt water occurs at the refuge's intake structures. This has complicated management of the impoundments and has raised concerns that further harbor development would worsen matters, perhaps making freshwater management impossible.

Proposals for deepening the harbor and extending it upstream convinced John Davis, manager of the Savannah Coastal refuges, and Glenn McBay, then supervisor of the Brunswick Ecological Services field office, that something had to be done to prepare for the inevitable harbor expansion. The recently initiated study is the outcome of that conviction and a lot of hard work. Over 2 years of persistent planning by Wildlife Resources, Habitat Resources, Fishery Resources, and Research went into the study before funds finally were approved in 1985. The study will take almost 3 years for completion, but it is expected to provide answers that will be useful far into the future. Those involved are pleased in getting this innovative effort underway, and believe it shows what can be accomplished when different Service programs work together.

Above, Service biologists Fred Seavey and Linda Hurley, right, identify samples of submerged aquatic vegetation from the Bay.

At left, trademark of Chesapeake waters, the skipjack, is the only kind of craft currently allowed to dredge for oysters in Maryland.

Inez Connor, Public Affairs Officer

Service Active in Chesapeake Restoration

Steve Funderburk
Ecological Services
Annapolis, Maryland

It is called the Queen of Bays—The Chesapeake. "The Bay" to most locals, its name comes from the Algonquin Indian word "Chesepiooc" meaning Great Shellfish Bay. Captain John Smith, the Jamestown colonist, remarked that "heaven and earth never agreed better to frame a place for man's habitation."

No other estuary in North America is larger nor exceeds the Chesapeake's annual harvest of wildlife. Many prominent species are an integral part of this great mid-Atlantic estuary—canvasback, oysters, blue crab, Canada geese, striped bass, osprey, and bald eagle.

Regrettably, the Bay has suffered considerable abuse. No longer are American shad or Atlantic sturgeon plentiful. Striped bass populations have declined alarmingly. Wintering canvasback are only a shadow of their historical numbers.

The abuse is severe and insidious, stemming from one main problem—water pollution, primarily by nutrient enrichment, but also toxic chemicals. The pollution comes from nonpoint sources, especially agricultural lands, and point sources, primarily sewage treatment plants and industrial outfalls.

The Service is participating in a multimillion dollar Federal and State effort to restore the Chesapeake. The Service joined the cleanup team in 1984 through a memorandum of understanding with the Environmental Protection Agency (EPA). EPA is the Federal member of the Chesapeake Bay Agreement, a brief

and succinct document establishing a formal commitment among Bay States and the Federal Government to reclaim the Bay's bounty.

The Service hopes to restore many important resources of the Bay. It is joined by other Federal agencies—EPA, Soil Conservation Service, Corps of Engineers, and National Marine Fisheries Service, each with separate restoration missions. In addition, Maryland, Virginia, and Pennsylvania are deeply involved in the program.

Several Ecological Services biologists at Annapolis are involved with the Bay program, under the direction of Steve Funderburk. Tim Hall leads the nonpoint source pollution objective. Field work is being conducted in the Choptank River, an area valuable to submerged aquatic vegetation, anadromous fish, and waterfowl. They are collecting extensive water quality data on the Choptank River, analysis of which should reveal specific agricultural areas urgently in need of best management practices by agriculture to reduce nutrient runoff.

Steve Goodbred heads up the point source objective and is studying four industrial discharge sites to determine effects of effluents on fish, turtles, mollusks, and plants. The collection of necessary test and control samples has been made at most sites.

Goodbred is also using laboratory bioassay testing in his assessments and will use his results to change effluent discharge limits, if necessary, and to affect discharge limits at similar industry sites on the Bay.

Linda Hurley and Fred Seavey are responsible for assessing trends in living resources. Hurley specializes in the submerged aquatic vegetation data and Seavey documents trends in wintering waterfowl and in shoreline development.

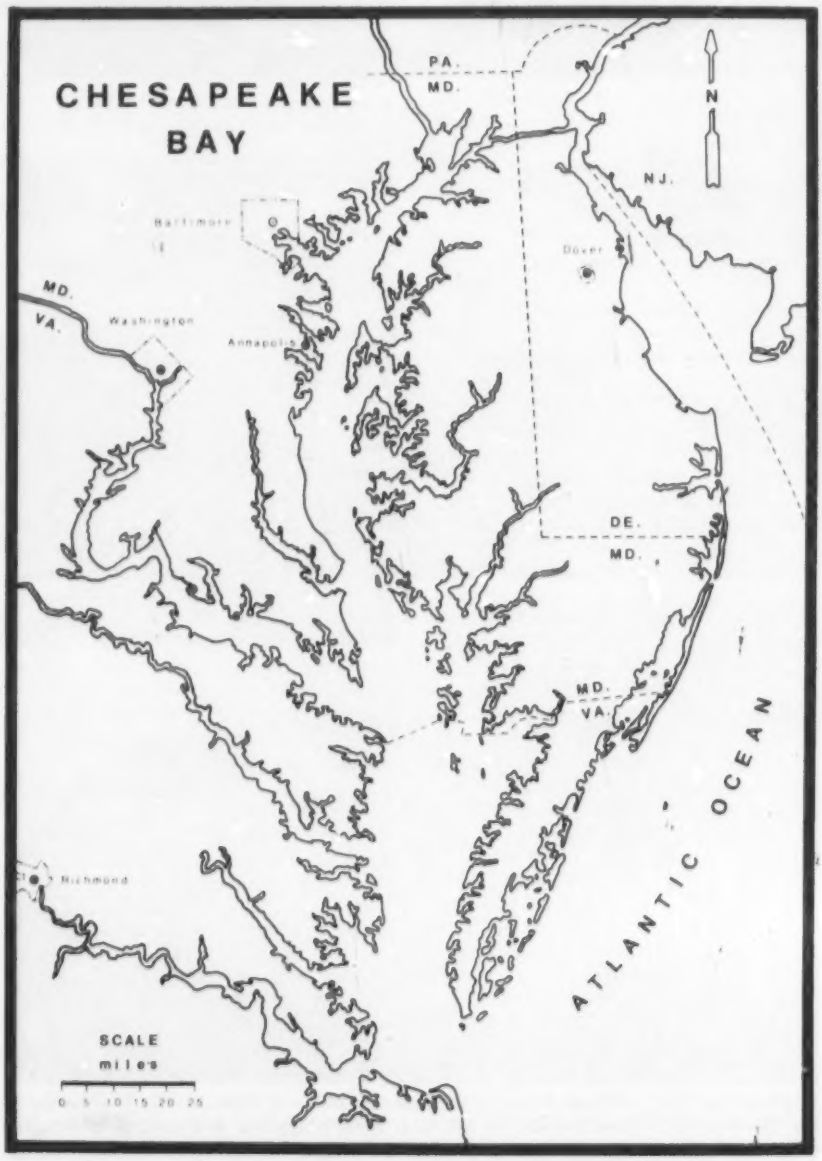
Aerial photography and subsequent mapping of aquatic vegetation in the Bay was done in 1985, and will be continued in 1986. The Annapolis Field Office and the Baltimore Corps of Engineers recently published an aquatic vegetation identification brochure. Seavey and Jeff Booth, a cartographer, also prepared a "Chesapeake Bay Wetlands" map and a series of Bay wetland atlases, using data from the Service's National Wetlands Inventory.

Linda Andreasen, working primarily on public education materials, assisted in the development of six fact sheets, a "Chessie" sea creature coloring book, and a color poster-brochure on living resources and problems of the Bay. She often arranges the office's portable Bay exhibitions for display at a variety of meetings and conferences.

Charles Wooley is the Service's Fisheries Chesapeake Bay coordinator for the Federal/State striped bass hatchery and tagging program. He has been working closely with the States of Maryland and Virginia. This past fall almost 200,000 striper fingerlings were marked with binary coded wire tags, and 4,000 were marked with internal anchor tags. Wooley will assist Maryland and Virginia in the capture of this year's brood stock for hatchery production.

Bert Brun handles the difficult task of multi-national liaison, a necessary role in promoting living resource enhancement. Glenn Kinser serves as the principal Service representative for regular meetings of the multi-agency Bay Program infrastructure, while other biologists attend various subcommittee meetings.

The Bay's problems illustrate the "tragedy of the commons"—everyone abuses their "common" Bay with near impunity. The cumulative impacts of the abuses now confront us. The Bay's restoration is a tremendous task, one requiring time and the committed efforts of everyone. The Service will help to ensure that pollution is abated for the benefit of Chesapeake Bay fish and wildlife.



Bear River Headquarters Abandoned

Brigham City, Utah—These photographs, taken on March 1, 1986, offer grim evidence of the destruction of headquarters at the Bear River Migratory Bird Refuge. Prolonged flooding of the Great Salt Lake and accompanying ice jams have destroyed refuge facilities and the Service has found it necessary to abandon the site permanently.

Sam Marler, Public Affairs Officer

Seen Any Black-footed Ferrets Lately?

Although Wyoming has the only known population of black-footed ferrets, several reports of sightings of the endangered species have been received from South Dakota, Utah, and Colorado.

Because of the publicity the Wyoming ferrets have received, people have called the Service to advise that they know of ferrets in States outside the known original range of the species. Sometimes reports prove to be domesticated species of ferrets, weasels, or other small animals, and sometimes these reports cannot be associated with any creature in the vicinity of the report.

It is not easy to verify reported sightings of the black-footed ferret. To follow up on reported sightings, individuals trained in the methods of finding and identifying ferrets must contact the individual who reported the sightings, and, if convinced of the possible validity of the report, these experts go to the area and search for the animal.

While Region 6 (and black-footed ferret coordinator Max Schroeder) has authority for management of the ferrets, research for the project is headed by Dr. John Oldemeyer of the Denver Wildlife Research Center. Most of the Center's functions have been transferred to the U.S. Department of Agriculture along with the Animal Damage Control program. Oldemeyer and his responsibilities remained with the Service.

One captive population of black-footed ferrets is held by the Wyoming Game and Fish Department. Dr. Tom Thorne of the Wyoming Game and

cont. on p. 23

National Hunting and Fishing Day Support

Service Denver Regional Director Galen Buterbaugh receives a certificate of appreciation from "Red" Frodine, right, of the National Shooting Sports Foundation for outstanding efforts by Region 6 in promotion of National Hunting and Fishing Day observances.

Regional Wetlands Agreement Signed

Regional Administrator John G. Welles of the Environmental Protection Agency, left, and Service Denver Regional Director Galen Buterbaugh sign a memorandum of agreement between the two regions "to improve and increase the protection and conservation of wetlands and riparian habitats and associated public trust resources" by increasing cooperation between the two agencies.

Ferrets

cont. from p. 22

Fish Laboratory at Laramie is in charge of this captive breeding population.

The adult black-footed ferret weighs about two pounds. Its coat is buckskin-colored, trimmed in black, with black face mask, black-tipped tail, and, of course, black feet.

People who see an animal they believe is a black-footed ferret should contact the nearest State conservation officer, or Service personnel. It will help if an accurate description of the animal is reported. If available, use binoculars to study the animal. The feet, underbody, and hair length should be closely observed. Observe behavior and movements for as long as possible, and of course, take photographs if there is an opportunity. Determine whether there is a prairie dog town in the area. Record the mile marker or county road intersection nearest the sighting, the date, time of day the sighting was made, and a description of the area. The person reporting should leave a telephone number where he can be reached.

Benton Lake Refuge Hosts DU Project

Tom Tornow
Benton Lake National Wildlife Refuge
Black Eagle, Montana

Since the March 14, 1984, signing of a memorandum of understanding between Ducks Unlimited, Inc. (DU) and the U.S. Fish and Wildlife Service, DU has undertaken many waterfowl habitat improvement projects. The largest so far has been constructed at Benton Lake National Wildlife Refuge in northcentral Montana.

The 12,383-acre refuge is subdivided into six marsh impoundments. The 2,100-acre Unit IV impoundment is used as a saline sump. Saline water is flushed into Unit IV from the other impoundments and allowed to evaporate. Minimum water levels are maintained. However, the entire area of Unit IV is not needed for the saline sump.

In March 1985, refuge personnel submitted to DU a proposal to subdivide the large impoundment and construct three 2-acre nesting islands.

DU approved the project, and during the months of July and August refuge staff, along with DU engineers and biologists, designed the project. An 8,100-foot dike and two water control structures would subdivide Unit IV, creating a new 393-acre impoundment. Two 2-acre islands would be constructed in the middle of this unit. Fifty-one hundred feet of level ditching would connect the borrows of the dike and islands. A third 2-acre island would be constructed in Unit III. All three islands and the impoundment-facing side of the dike would be riprapped. The refuge would plant the islands and the dike to develop waterfowl nesting cover. Total cost was to be approximately $500 thousand.

In October work began. By the 20th of December the entire project was completed. Besides creating additional wetland acres for thousands of migrating waterfowl and shore birds, the project is expected to annually produce 2,000 waterfowl.

During calendar year 1985, DU completed 27 projects on Service lands in Region 6 at a cost of more than $1.7 million. The largest project has been the $500,000 cross dike, water control structure, and nesting islands at the Benton Lake refuge.

REGION 6

Engineer of the Year

Terry W. McLaughlin, P.E., was recently named the Engineer of the Year of the U.S. Department of the Interior's Fish and Wildlife Service. McLaughlin, who works in the Denver Regional Office, was one of 40 agency nominees submitted for the title of Federal Engineer of the Year. The National Society of Professional Engineers (NSPE) sponsors the Federal Engineer of the Year Awards (FEYA) program in conjunction with National Engineers Week.

McLaughlin received his award during ceremonies held in Washington, D.C. NSPE represents more than 75,000 engineers in all disciplines of the profession, 12 percent of whom work for local, State and Federal governments.

As a supervisory environmental engineer, McLaughlin developed a unique, innovative degassing system to remove supersaturated nitrogen gasses from fish hatchery rearing and fish laboratory research waters, eliminating the complications of "gas bubble disease." He also has designed a simple activated-carbon filter (gravity flow) for the removal of malachite green from fishery wastewater, and his papers have been requested by organizations in Italy, Norway, Canada, Israel, and elsewhere.

Terry W. McLaughlin, PE, displays the plaque honoring him as Engineer of the Year for the Service. President-elect Joseph H. Kuranz of the National Society of Professional Engineers, left, looked on as Service Deputy Director Gene Hester, right, presented the annual award.

People in the Field: Alaska

Bev Grafel
Public Use & Information
Region 7
Anchorage, Alaska

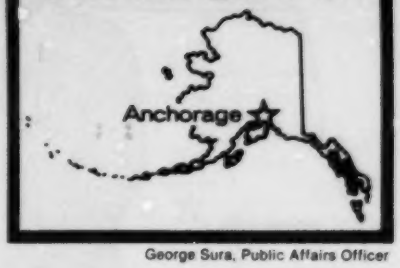
"What are you doing in that uniform?" is a question James Charles is getting used to hearing.

"Everyone is surprised to see me standing at their door wearing a brown uniform with a service patch," explains Charles. "I know they think I am a game warden. I allay their suspicions by explaining I'm not a law enforcement person and I tell them who I work for. After they're certain I'm not going to arrest them we talk about my new job. We discuss other subjects—news and the weather. Then I try to get back to the reason I'm visiting—the geese on the delta."

James continues, "These are my friends and relatives—people I grew up with. I've lived here in the village of Tuntutuliak for 40 years. I grew up hunting and fishing and now I am raising my own family in this same village."

James Charles is one of ten Refuge Information Technicians (RITs) employed by the Fish and Wildlife Service on the Yukon Delta National Wildlife Refuge. The RITs help with communication—providing a link between the refuge staff and villages. They travel by plane, snowmachine, and truck to assist the refuge staff at meetings, meet with school groups, and record goose catches and egg harvest surveys. Their main job is to provide information to local residents about managing the refuge and its resources. The program began in October 1984.

REGION 7



George Sura, Public Affairs Officer

The most common communication between representatives of governmental agencies and villagers is through radio, television, and information meetings at the village schools and community centers. The RITs help bridge the cultural gap by dispelling myths as they explain sensitive issues such as the goose management plan.

The goose management plan is one step that governmental agencies and the private sector have taken to define the problem and solve the dilemma of declining populations of arctic nesting geese. The management plan deals with a living resource that affects the culture, lifestyle, and day-to-day survival at these people. Refuge Manager Ron Perry says, "The most important impact the RITs have is with communication. The workers are bilingual thus strengthening the working groups."

The declining populations for four species of arctic nesting geese that nest on the delta is a sensitive problem facing the Yukon Delta refuge. The geese are hunted in both Alaska and the lower 48. They have been hunted by rural residents of the delta for centuries.

To solve the problem, government agencies, Native groups, and private organizations banded together.

One important factor within control is hunting, so voluntary restrictions on harvest were cooperatively agreed upon.

The refuge also has implemented an information and education program including teacher training workshops focusing on the use of natural resources and ecology of waterfowl.

Josie Riczicka, a RIT who lives in Bethel, says she was never aware that she lived on refuge lands while

growing up in the village of Kwethluk. She says her children enjoyed the comic book the Service recently printed describing the role of the Fish and Wildlife Service in managing wildlife. She says she feels her children are obtaining a much better education in science, Yup'ik (Eskimo) culture, and wildlife than she received. She adds, "I make a deliberate effort in my job to discuss the differences between the Fish and Wildlife Service (refuge personnel) and the Alaska Division of Fish and Wildlife Protection (enforcement) persons." The uniforms tend to get blended together."

She also says the most common question she's asked is "Do you work with the birds?" Perhaps the waterfowl are truly on the minds of these people who have lived for centuries with the rhythm of the land and seasons.

Managing in Alaska

Managing Alaska's lands (375 million acres) is no easy task—as most refuge managers will attest to. The State is in a developing mode with land managers scrambling to carry out each agency's mission. Millions of acres have been conveyed to the State and Native organizations from the public domain.

Laws including the Alaska National Interest Lands Conservation Act of 1980, Alaska Native Claims Settlement Act of 1971, and the Alaska Statehood Act challenge both land managers' and attorneys' skills in the government and the private sector.

Land managers grapple with conflicting interests—such as subsurface mineral rights, oil and gas leases, navigable waterways, and preexisting land claims. The Service deals with these conflicting interests—in additiion to managing the land in the best interests of wildlife.

Approximately 40 Native villages ranging in size from 30 to 3,681 persons are scattered throughout the Yukon Delta refuge. The distance between them comprises hundreds of miles of soggy tundra, rivers, lakes, and waterways with low-growing vegetation. The refuge has hundreds of miles of shoreline as refuge lands which extend from Norton Sound to Kuskokwim Bay. Most of the residents of the Yukon-Kuskokwim Delta are of Yup'ik descent. Since the population is predominately Yup'ik, the expected language and culture barriers exist.

Traveling to the interior villages can take days depending on the weather because there are virtually no roads. The rivers are used as highways and the predominate means of transportation is by small plane. Due to the heavy use by air taxi services the Bethel airport is the third most heavily used airport in the State.

The refuge is divided into 2.5 million-acre districts (each district is about the same size as half of the State of Massachusetts). Rural residents spend the winters ice fishing, trapping, and "keeping warm." It is not uncommon for the temperature to stay 30 degrees below zero for weeks at a time.

Most spend their summer fishing either commercial, subsistence or by wage employment. Subsistence living is the mainstay of culture and the heart of day-to-day living on the Delta. Jobs are scarce or non-existent. People live by their wits and still use the resources of the land for fish, caribou, moose, berries, waterfowl, and firewood as their ancestors did for centuries. Bartering was still the common exchange as late as the 1920's.

Sue Matthews

Yukon Delta's Refuge Information Technicians. Left to right (front row) Alex Nick, Felix Hess; (2nd row) Josie Roczicka, Michael Jimmy, James Charles; (Back Row) Chris Tulik, Pauline Green (deceased). The technicians are permanent intermittent employees.

Employee Leaves Region in the Cold

Julie Morin recently transferred to the Swan Lake National Wildlife Refuge near Sumner, Missouri, after serving as the secretary in Public Affairs for the Alaska Regional Office. While this may seem somewhat mundane, Ms. Morin left the "Great Land" and headed southeast in style.

On her way to the airport she and her young daughter dropped by the regional office for a final goodbye. While her mother was busy chatting with several fellow employees, the daughter looked up at something on the wall with the word "PULL" printed in big red letters. The youngster did just that and—with bells and sirens resounding through the air—the regional office was quickly evacuated. The weather was cold with a brisk wind coming from due north.

Julie and her daughter were last seen ducking into a taxi as it hung a right turn on Tudor Road and headed for the airport. Region 7 advises the folks at Swan Lake refuge to be on the lookout for a young girl traveling with Julie—especially on cold winter days.

A New Star in the North

Diana Cross
Office of Information Transfer
Ft. Collins, Colorado

With little fanfare, a new Research and Development entity was established last year: the Alaska Fish and Wildlife Office of Research. The July 21 action marked the culmination of 6 years of incremental consolidation of research administration in Alaska.

Previously, two Alaska field stations existed as part of the Denver Wildlife Research Center and the Seattle National Fishery Research Center. These have now merged into a single fish and wildlife research office in Anchorage under the direction of Dr. A.W. (Bill) Palmisano. The Office is administered by the Division of Fishery Research, which will provide direction and funding for Alaska's fishery research program, and will transmit guidance and funding for wildlife and habitat resources research from the appropriate Division Chiefs.

The primary advantages of the reorganization are to:

- Highlight issues facing the Service in Alaska, such as the Alaska Native Lands Claims Act, the Marine Mammal Protection Act, and existing and proposed treaties and agreements with other nations.

- Reduce operating costs through consolidated use of space, equipment, administrative and clerical staff.

Alaska research biologists were instrumental in the development of aquatic telemetry techniques for use in Alaska. Projects on the Kenai and other Alaskan rivers have helped refuge managers, Alaska Fish and Game biologists, and personnel from other agencies to identify important fishery habitats.

- Provide a focal point for coordinating Service research in Alaska.

- Provide a more effective mechanism for bringing the research needs and opportunities in Alaska to the attention of the Washington Office.

According to Palmisano, the office will focus research on marine mammals and waterfowl within the next few years. "Polar bears and sea otters are of special political and economic significance," he stated. "In addition, several species of geese and ducks that nest on interior refuges are likely to be the subjects of increased research emphasis."

Service management goals for polar bears include maintaining the population at current levels and providing for beneficial human use, including Native subsistence use. To meet these goals, four major research needs for polar bears have been identified:

(1) Determine the status and trends of populations in targeted areas;

(2) Determine seasonal movements and habitat requirements;

(3) Develop advanced technology to monitor activity; and

(4) Assess the impact of development on denning polar bears.

Waterfowl that nest in Alaska, particularly those using the Yukon-Kuskokwim Delta, are of interest to researchers because of their precipitous population decline in recent years. According to Palmisano, future research will include developing improved techniques to survey populations, determine habitat requirements, and identify factors affecting natural mortality of ducks and geese nesting in interior Alaska.

Issues that may require increased emphasis for fishery research include impacts of oil and gas development on the North Slope, an international agreement between the U.S. and Canada to conserve salmon stocks using the upper Yukon River, and problems associated with the protection of Chinook salmon habitat in the Kenai River.

There is also increasing interest in developing a consolidated approach to fish and wildlife conservation in Alaska's vast coastal and marine environment. The Service's traditional field research program may be supplemented by newly developed technologies such as satellite telemetry and advanced environmental planning and analysis techniques, developed by the Division of Biological Services.

"There is no shortage of challenging and exciting opportunities for fish and wildlife research in Alaska," said Palmisano. "The Alaska Fish and Wildlife Office of Research is now organized to meet that challenge."

Alaska research biologists routinely assist the Service and other agencies with their fishery research needs in Alaska. An evaluation of salmonid use of the fish ladder at Brooks River Falls, Katmai National Park, was recently completed for the National Park Service.

Counting Animals the Space-Age Way

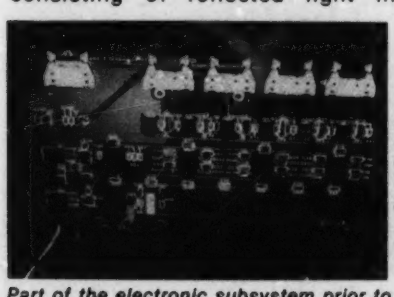
Diana Cross
Office of Information Transfer
Ft. Collins, Colorado

Biologists often need to know how many animals are in an area at a given time. In the case of large animals such as deer and antelope, which may congregate in large groups in winter, attempting to count them from aircraft is not only tedious but subject to several types of error.

If only there were a better way—say, a sophisticated combination of cameras, computers, and airplanes. Something that could analyze thousands of tiny elements from half a mile away, and determine in less than a thousandth of a second which ones make a deer. Fantastic? This may soon become a reality, thanks to research involving Service scientists.

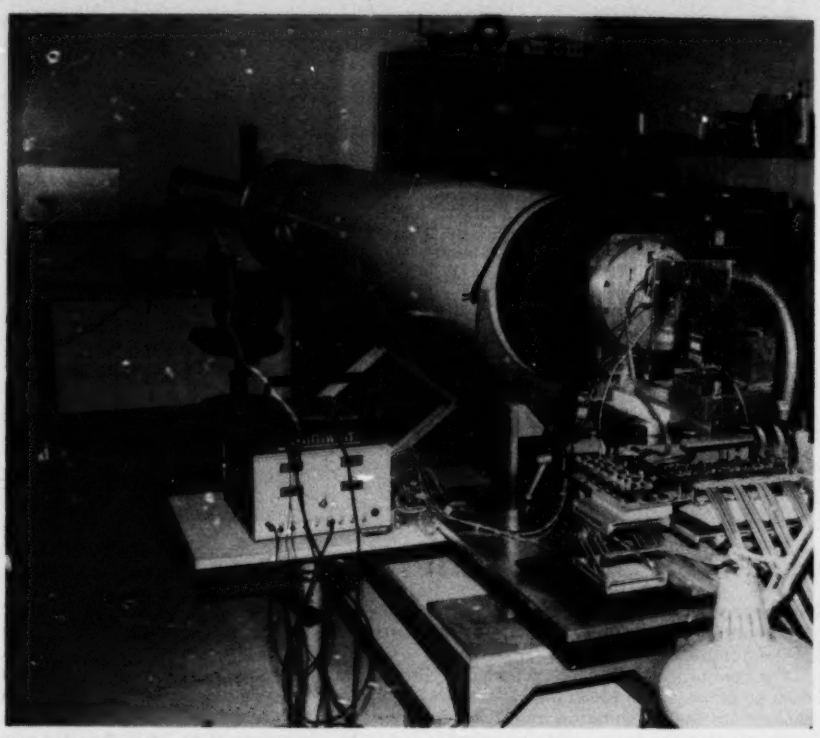
In the 1960's, use of thermal-infrared scanners was the most common remote sensing technique. This method was not very satisfactory, however, as most mammals active in winter are well insulated against the cold and thus are not easily detected by thermal sensors.

A new generation of remote sensing research is in progress. David R. Anderson, Leader of the Colorado Cooperative Fish and Wildlife Research Unit, and Clair L. Wyatt, Senior Engineer at the Space Dynamics Laboratory at Utah State University, have worked for the past 10 years to develop remote sensing instruments to enumerate populations of large ungulates. Initial research indicated that some species have a unique spectral signature, consisting of reflected light in wavelengths just beyond what is visible to our eyes.



courtesy David R. Anderson

Part of the electronic subsystem prior to final assembly. Twenty printed circuit boards such as this one compose the electronics unit. All data processing and classification is to be done on board the aircraft under the control of a portable digital computer.



courtesy Space Dynamics Laboratory

Part of the optical subsystem is shown in preliminary calibration tests using a 12-foot columnator. Proper alignment of the nearly 7 thousand detectors has posed problems in the past.

Four years of field work and analysis was funded through a unique program involving conservation agencies in Arizona, Oregon, and Utah through the Federal Aid program. A prototype instrument was designed and built during this time. This instrument sensed reflected energy in four "colors" in the near infrared wavelengths, and could process this information to classify and enumerate animals.

The potential benefits for field researchers were obvious, but more development was found necessary after tests were completed on the first instrument. Federal Aid administrative money was secured to develop and test a second generation system. This new system is being completed and will begin a series of ground tests soon. It is designed to operate in a small, single-engined aircraft at about 2,300 feet above the ground. Over 6,900 detectors are used in the optical part of the system (1,728 for each of the four "colors").

Elements as small as a four-inch square can be detected, providing excellent resolution. (LANDSAT can resolve picture elements no smaller than about 4 acres!) Four special interference filters operate to obstruct certain wavelengths so that only the ones bearing information are passed on to the electronics subsystem.

This optical subsystem has provided the major technical challenge to engineers, according to Anderson, and is still being perfected. The electronics subsystem, controlled by a portable computer aboard the aircraft, will allow communication with the remote sensing subsystem. All data processing and classification are to be done by a series of microprocessors at a rate of about eight billion pieces of data per hour.

The technological advances in this field are coming in quantum leaps. Anderson is hopeful that these techniques will become practical and affordable in the near future. While his research has concentrated on censusing populations of big game, it also has potential for marine mammal research. Some day it may be possible to count individual species as small as colonial waterbirds by remote sensing. A new era in population surveying is about to begin!

For more information about these and other subjects, contact Diana Cross at Research and Development's Office of Information Transfer in Ft. Collins, Colorado, at FTS 323-5451 or (303) 226-9451.

Region 9 Safety Committee Honored

At a recent meeting of the Region 9 Safety and Health Committee, Assistant Director for Administration, Edward L. Davis, presented certificates of appreciation to past members of the committee.

The committee was established by the Director in August 1983 to provide Washington area employees input into the local safety program. Region 9 employees are dispersed throughout the Washington metropolitan area in five different buildings. Occupants of each building are represented by primary and alternate members to the committee and are appointed for 2-year terms.

In his remarks, Davis stated that establishment of the committee in 1983 provided Washington Office employees the same input into the local safety program enjoyed by Regional employees, and the initial members had served admirably during the difficult startup years.

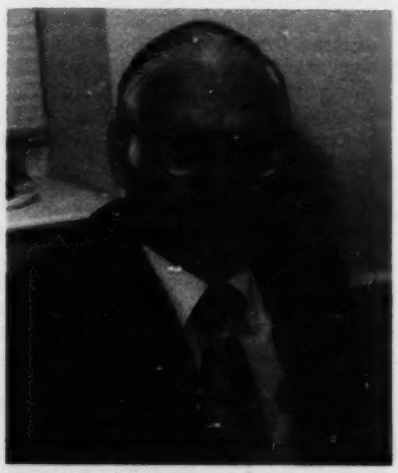
Shown here are, from left to right, Peter Escherich, Earlena Scott, Edward Davis, Paul Henne and Irene Magyar. Bill Savannah was not present for the occasion due to official travel.

Researcher Recognized

H. William Newman, Assistant Director for Research at the National Fisheries Center at Leetown, was recently presented with the Meritorious Service Award and an accompanying citation signed by the Secretary of the Interior.

Much of his career has been devoted to the protection and management of Pacific salmon. His pioneering research made significant contributions in the development of structures and procedures to provide river and stream passageways for anadromous fish species. His research also involved salmon diets, the physiology and energetics of salmon, and the behavior and movements of fish.

Author of more than 15 scientific publications, he is a member of the American Fisheries Society and the American Institute of Fishery Research Biologists. Newman currently directs research activities at Leetown and the fisheries center's other research and development facilities in six other States.



H. William Newman

Newman was presented with the award in recognition of his notable achievements as a researcher and administrator in the field of fishery resource management.

Utah Biologists Cited for Exemplary Action

Harold Tyus
Field Supervisor
Colorado River Fishery Project
Vernal, Utah

Two Service biologists in Vernal, Utah, have been cited by the Department of the Interior for exemplary action in the rescue of a child from whitewater rapids of the Green River last June.

Penny Trinca and Devona Lam were radiotracking Colorado River squawfish from a raft within Dinosaur National Monument when they sighted a small boy clinging to a boulder in the river below Schoolboy Rapid. It was later learned that the boy had fallen from a raft operated by his two brothers and another youth.

Trinca and Lam pulled their raft ashore about 500 yards downstream and alternately swam and waded to a point upstream of the boy. Trinca then floated down to the boy while Lam held a lifeline, and the two were able to bring the boy to shore.

Trinca and Lam received the Department's Exemplary Act Award "in recognition of quick and decisive action in a situation involving an element of personal risk and the potential for a tragic end."

According to Lee Mills, fishery resources zone supervisor in Denver, the stretch of river in which the incident occurred is "a treacherous one and difficult to navigate without substantial experience and ability."

FISH AND WILDLIFE NEWS

FISH AND WILDLIFE NEWS is published bimonthly for employees of the U.S. Fish and Wildlife Service by the Office of Current Information, Public Affairs, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments and suggestions are appreciated.

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Layout and Design by Cathy Waters, Division of Realty

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FISH AND WILDLIFE NEWS

U.S. Department of the Interior Fish and Wildlife Service

JUNE—JULY—AUGUST 1986

Special Section: International Affairs

A Message from the Director

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DEPOSITORY 376

There is a much-used saying: "If it isn't broken, don't fix it." That is sound advice. And I have tried to keep it in mind when setting in motion realignment of Service management.

As everyone in the Service must know by now, there is a change in how business is conducted.

The shift is from a program management system to line/staff management. Many may have had thoughts to this effect: "Well and good, but what will it mean to me?" That is one of the questions I also would ask. What I believe it means is being able to get the job done more efficiently, with less paperwork and less frustration and hassle. It will mean that more time and effort can be devoted to fish and wildlife management.

I want wildlife managers to have more time for wildlife; an accountant to have more productive time accounting, and public-use specialists to have more contact time with the public. It is a waste for us to be glancing frequently over our shoulders at a mountain of paperwork that threatens to overtake us. I want maximum effort devoted to the wildlife task at hand. That is how to conserve the wildlife for which we have responsibility and that is how I believe teamwork is built.

I expect most of you have questions about the reorganization. Ask those questions. They all will be answered. In the weeks and months ahead I think the how's and why's and wherefore's of any changes will be understood fully. For the time being, I suggest two things: don't fret about the realignment, and do share with your supervisors and me ways and ideas to improve day-to-day effectiveness in wildlife management, and to eliminate processes and paperwork that serve no useful purpose.

Fish and Wildlife News is intended to be a means to get the word to all employees and to their families. Printing processes and budget do not always allow passing of the word in as timely a fashion as we might wish, but the information in it will be accurate. I intend to use it as an important communication vehicle.

In late May, Service Director Frank Dunkle addressed Washington Office employees concerning his management philosophy and priorities for the agency.

Service Undergoes Organizational Realignment

A number of key personnel reassignments in the Service's Washington headquarters have been implemented as part of the recent organizational realignment.

Director Frank Dunkle initiated the actions to return the Service organization to its traditional line/staff structure under which more organizational decisions may be made closer to the wildlife resource and more expeditiously. Regional Directors will be responsible for resource decisions within their geographic areas of supervision. The Washington-based members of the Directorate and their offices will provide essential staff support to the Director.

The line/staff operation replaces a program management system under which the Service had operated since 1972.

"Priorities of the Fish and Wildlife Service will be directed toward devoting people and funds, in the most effective way possible, to address wildlife conservation and management issues where they occur—in the field," Dunkle said. "This structural change streamlines the working relationships from the Director to the field, with Regional offices making some adjustments to achieve increased efficiency."

cont. on p. 2

Editor's Note:

There were a number of significant events taking place during late June and July. Organizational changes within the Service and an important decision concerning nontoxic shot led to this special edition of *Fish and Wildlife News* being extended an additional month.

I 49. 88:

"Take Pride" Takes Off

Joyce Hemenway
Take Pride Coordinator
Washington Office

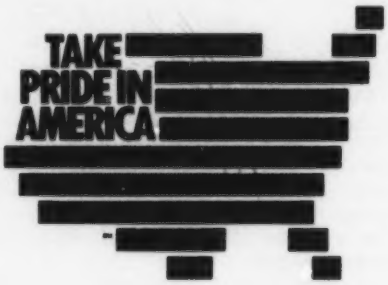
The Fish and Wildlife Service is now advancing Secretary Hodel's *Take Pride in America* campaign. Over the past few months, virtually every Service component has creatively woven the public awareness theme into daily activities and the program is steadily gaining momentum.

Volunteer efforts continue to be the focus of the *Take Pride* effort in many regions. Participation in many of these resource enhancement projects has attracted media attention, thus bringing the *Take Pride* message to thousands more potential *Take Pride* enthusiasts. And, in turn, the Fish and Wildlife Service is responding with new, inventive ways for Americans to help.

Participation ranges from private donations of time or money, to children's poster and essay contests. Take Pride in America posters and buttons can now be found in crowded urban areas, and remote, backwoods hideaways. Awards and plaques are being presented to grateful volunteers for jobs well done, encouraging future involvement in other projects.

Youth groups and entire schools are now a part of the campaign. The awareness campaign is being included in teacher education packets, programs devised by Service personnel, and speeches to civic organizations and clubs.

The Service is demonstrating its pride in America's natural resources through its enthusiasm for this campaign. Each idea is commendable and every effort is recognized and appreciated.



THE SECRETARY OF THE INTERIOR
WASHINGTON

AUG 5 1983

MEMORANDUM

TO: Director, Fish and Wildlife Service

FROM: The Secretary

SUBJECT: Fish and Wildlife Service Take Pride Efforts

Frank, I have just reviewed a package of clippings from around the country representing various Take Pride activities of your refuge managers. I am very impressed!

Keep up the good work!

Don

DONALD PAUL HODEL

Service involvement in the "Take Pride" campaign is not going unnoticed as evidenced in this recent memorandum from Interior Secretary Don Hodel.

cont. from p.1

Fewer supervisors will report directly to the Director. Previously, 20 subordinates reported to the Director. Now, in Washington, six assistant directors report to the deputy director (staff), Dr. Eugene Hester. Hester and the eight Regional Directors report to the Director.

Program development staffs in the Washington office are being recruited for other assignments in the Regional offices or in the Washington office.

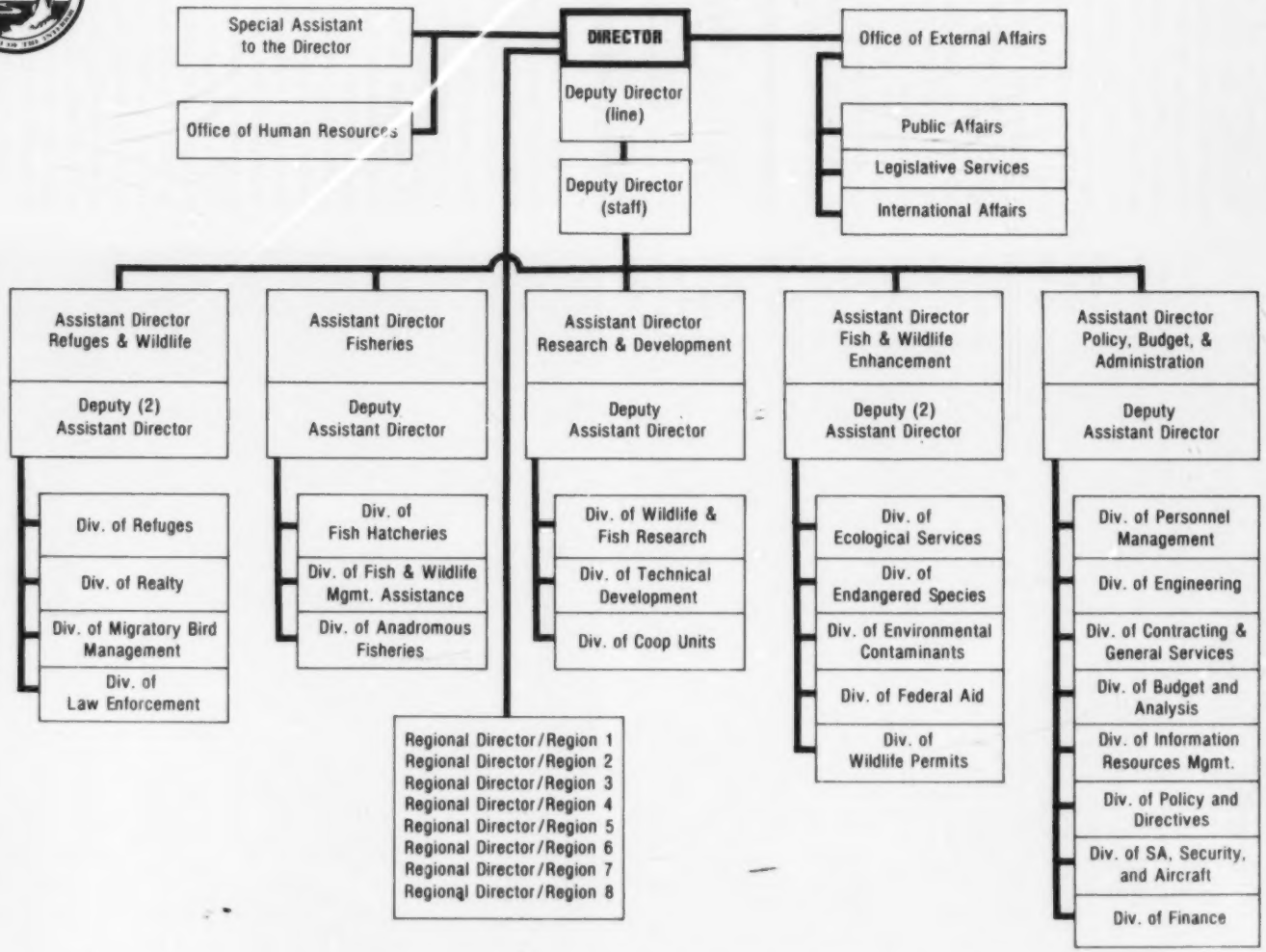
In Washington, most of the Service's wildlife resources activities have been consolidated under the assistant director for refuges and wildlife, while the Federal assistance and habitat resources programs have been combined under the assistant director for fish and wildlife enhancement. Responsibilities for budget development and administration have been combined under an assistant director for policy, budget, and administration.

The offices of public affairs, legislative services, and international affairs will report to the Director through an assistant director for external affairs. While the assistant director for research and development will be responsible to the Director for staff support on all research, scientific, and technical development matters, supervision of all research centers and laboratories and the cooperative fish and wildlife research units will be conducted by the Regional Director—research and development.

The Service's Regional Directorate positions are assistant Regional Directors for refuges and wildlife, fisheries, public affairs, law enforcement, fish and wildlife enhancement, administration, and human resources (formerly Office of Equal Opportunity).

A summary of the new organizational structure of the Fish and Wildlife Service in the Regions and the Washington office appears in the adjacent table.

U.S. FISH and WILDLIFE SERVICE ORGANIZATION CHART



Officials Ink North American Waterfowl Management Plan

Elizabeth Lipscomb
Current Information
Washington Office

A significant step in waterfowl conservation was taken on May 14, 1986, when Secretary of the Interior Don Hodel and Canadian Environment Minister Thomas McMillan signed the *North American Waterfowl Management Plan—A Strategy for Cooperation.* The Plan provides frameworks for cooperative international efforts in waterfowl conservation and management by setting population and habitat goals and suggesting ways to resolve problems of mutual concern.

Secretary Hodel described the plan as, "...a hopeful beginning to increase United States and Canadian cooperation on behalf of our waterfowl resources." Hodel stated, "We now need the participation and support of State, Provincial, Territorial, and local governments; private conservation groups; businesses; and individual members of the public... The North American Waterfowl Management Plan is pointing the way for us to go. Now it is up to all of us who care about waterfowl to make sure we get there." He added that the North American plan does not constitute a commitment by the national governments of the United States and Canada to fund all aspects of the plan.

The plan will be implemented through action strategies developed at the National, Flyway, Provincial, Territorial, and State levels. These will set out specific management procedures required in order to meet the goals outlined in the plan. A task group consisting of six Canadians and six Americans met August 19-20 at Remington Farms, Maryland, to outline some of the initial goals for the plan's implementation.

The habitat conservation objectives are designed to help rebuild waterfowl populations to the average levels of the 1970's. The plan also sets population goals for individual waterfowl species, with the objective of rebuilding duck numbers to a breeding population index of 62 million and a fall flight index of 100 million. By comparison, in 1985, duck populations were the lowest recorded in 30 years, with a breeding population index of 31 million and an estimated fall flight index of 62 million.

The plan's goals for geese and swans, which are generally faring better than ducks, are aimed at maintaining current populations and increasing several West Coast goose populations whose numbers are presently low.

Procedures for establishing hunting regulations will not be affected by the plan.

Copies of the plan are available from the Office of Migratory Bird Management, Room 536, Matomic Building, U.S. Fish and Wildlife Service, Department of the Interior, 1717 H Street NW., Washington, D.C. 20006, phone: 202-254-3207.

Diane Stewart

Canadian Environment Minister Thomas McMillan (left) and Secretary of the Interior Don Hodel at the signing ceremony for the North American Waterfowl Management Plan in Washington, DC. The document calls for cooperative waterfowl conservation efforts and sets habitat and population goals designed to bring waterfowl populations back to the average levels of the 1970's.

Ducks Unlimited Supports Waterfowl Plan

Ducks Unlimited, which will spend $550 million on its own continental waterfowl conservation projects over the next 15 years, supports the habitat goals of the North American Waterfowl Management Plan. It has challenged other conservation groups to help raise the $1.2 billion needed to carry out the plan.

"Funding is the hurdle we now have to overcome," said Hazard Campbell, president of Ducks Unlimited. "Because we are so acutely aware of the needs of waterfowl, Ducks Unlimited will spend more money accomplishing more for wetlands in the next 15 years than we've done in the past 50."

"We're asking the public and other private conservation groups to commit two dollars for each of ours so the plan can be completed. Money is a distasteful subject to some conservationists, but I know of no other way to get the job done. Washington has made it clear that the day of the public dole for wildlife is over."

Since 1937, Ducks Unlimited has conserved 3.6 million acres in Canada and some 350,000 acres in the United States and Mexico.

Service Proposes Phase-Out of Lead Shot by 1991

Use of lead shot for waterfowl hunting will be eliminated nationwide by the 1991-92 hunting season under a phase-out proposal announced June 25 by Assistant Secretary William P. Horn.

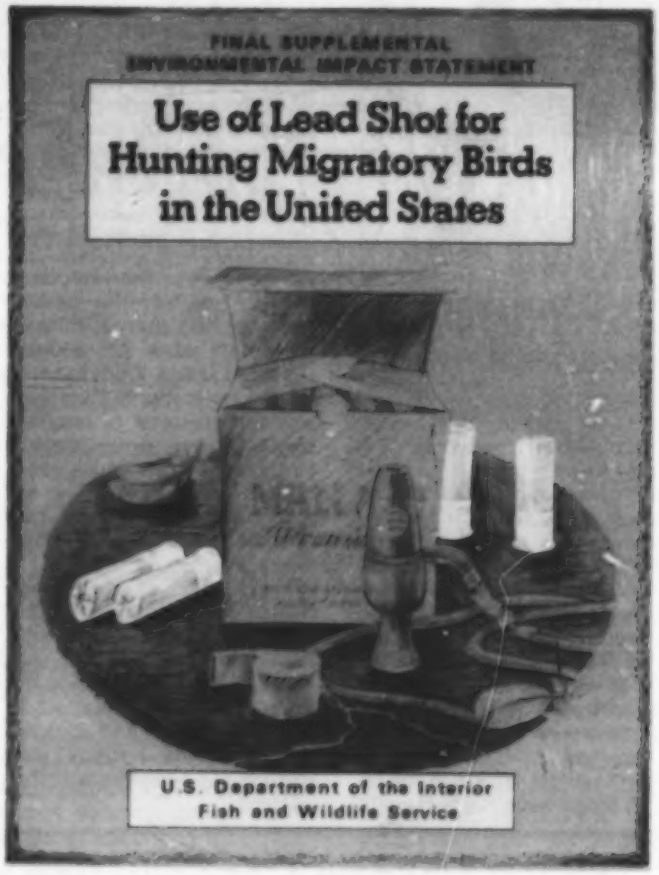
The 5-year scheduled phase-out was published as a proposed rule in the June 27 *Federal Register*. It is also the "preferred alternative" in the Service's "Final Environmental Impact Statement on the Use of Lead Shot for Hunting Migratory Birds in the United States," which was published in late June. That document examines nine alternatives for eliminating lead poisoning as a significant cause of death in migratory birds.

In related developments, on July 1 Federal District Court Judge Edward J. Garcia dismissed the National Wildlife Federation's (NWF) lawsuit against the Service aimed at forcing a 1987 ban on use of lead shot for waterfowling in the 48 contiguous States. Interior Department attorneys said Judge Garcia dismissed the lawsuit because he felt the Service had the opportunity to take a final action based on the environmental impact statement.

Assistant Secretary Horn had tried to reach an out-of-court settlement with NWF during a June 20 meeting with Jay Hair, NWF's Executive Vice President. NWF rejected Horn's offer that Interior would enter into a stipulated agreement to phase out lead shot by 1991 and negotiations broke down when NWF representatives failed to return for a scheduled afternoon negotiating session.

Following Judge Garcia's dismissal of the case, Horn pledged to follow through on the proposed 5-year phase-out of lead shot.

"I am very pleased that Judge Garcia has confirmed the reasonableness and effectiveness of the Interior Department's approach to resolving the lead shot controversy," he said. "We have worked very hard to achieve a consensus on this issue and to take positive steps to end lead poisoning in waterfowl and bald eagles. I am pleased that the dismissal puts this issue back in the hands of professional resource managers instead of leaving it up to lawyers and courts."


FINAL SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT
Use of Lead Shot for Hunting Migratory Birds in the United States
U.S. Department of the Interior
Fish and Wildlife Service

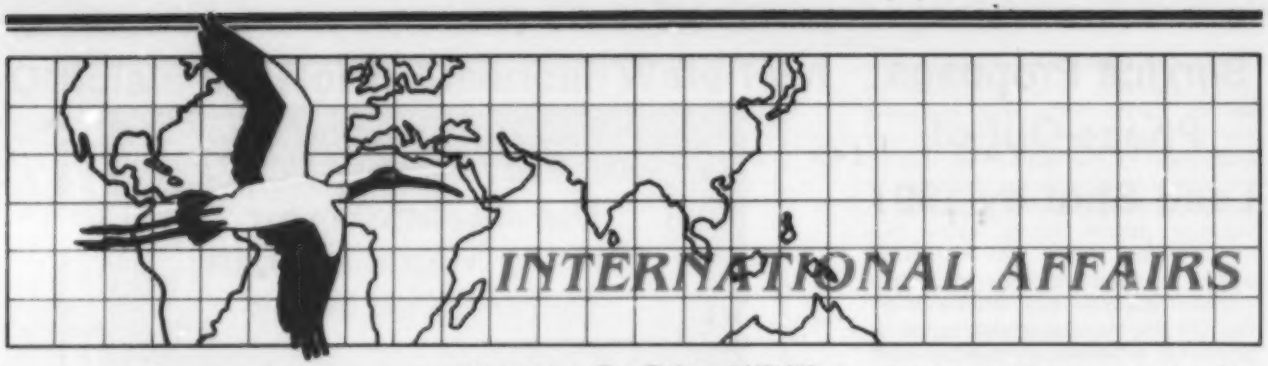
The proposal to phase out use of lead shot was suggested by the International Association of Fish and Wildlife Agencies in March 1986. Under the phase-out approach, lead shot will be prohibited first in the areas of the country that have the largest waterfowl harvests. These are the areas where both waterfowl and eagles are most frequently exposed to lead poisoning. At the same time, the phase-out approach has the advantage of offering reasonable time for ammunition manufacturers, retailers, and hunters to make the conversion to nontoxic shot.

Under this approach, use of lead shot for waterfowl hunting will be completely eliminated nationwide—including Alaska—by 1991, beginning in the 1987-88 hunting season with a ban on lead shot in counties where waterfowl harvests are highest. The ban will be extended each succeeding year to include counties where harvests are lower, as outlined below:

Harvest Level (Waterfowl/ Square Mile)	Year Lead Shot Will Be Prohibited	Percent of U.S. Waterfowl Harvest Occuring in Affected Zones
20 or more	1987-88	66%
15 or more	1988-89	69%
10 or more	1989-90	75%
5 or more	1990-91	84%
Fewer than 5	1991-92	100%

Conversion to nontoxic shot could be deferred if states carry out monitoring studies that show lead poisoning is not a problem in areas that would otherwise be affected by the conversion schedule. In no case, however, could the requirement for nontoxic shot be deferred beyond 1991.

Under this alternative, boroughs (counties) in Alaska would not be required to employ the gradual implementation schedule, but the State would convert totally to nontoxic shot by 1991 along with the rest of the country.



The Director's Perspective

I am pleased to introduce this special International Affairs section of *Fish and Wildlife News*. I place high value on good communications, having spent part of my professional career in information and education work. That experience has proved valuable to me in all areas of wildlife management. Keeping the public informed results in sportsmen showing greater concern for the resources they value, communities working to stem a local pollution problem, or a legislature enacting measures to provide and maintain habitat.

In similar fashion, efforts in the international arena have borne significant success. The Fish and Wildlife Service has had the distinct opportunity to help train wildlife scientists who can work to address world resource needs. Wildlife conservation issues have marked similarities the world over—loss of habitat, market exploitation, pollution, and environmental contamination. Yet all must be addressed in the same way: with disciplined knowledge and informed, effective fish and wildlife management.

I am proud of the Service's—our Nation's—contributions to improving the lot of wildlife and fishery resources on this planet. Our efforts, coordinated by the Office of International Affairs, have served an important information and education function to many nations seeking to restore and conserve wildlife for their citizens.

Service employees on occasion ask how the international effort relates to their day-to-day work. All of us in the Service, regardless of our title or location, work for an agency that derives much of its very existence from international treaties. The waterfowl that so many of us are dedicated to protect are but one visible manifestation of our international "linkage." The progress we make and the technologies we develop may indeed prove to be life savers to species not only in the United States but elsewhere in the world. Our international involvement is both an obligation and an opportunity—we must do it because it is our public trust and responsibility under treaties and laws; we choose to pursue it for the great chance it gives us to demonstrate the worth of wildlife conservation to a willing world.

Environmental Conservation and Foreign Policy

George A. Furness, Jr.
U.S. Foreign Service—Retired
Washington, D.C

Since the 1960's, not only has there been a major evolution in the way man has looked at Earth's environment, there also has been a dramatic expansion in international organization to cope with environmental and natural resource challenges. This evolution in perception has resulted in recognition that the global living space is an integrated biosphere; that human actions can markedly affect natural resources; that environmental conservation and economic development are substantially interrelated; and that without international cooperation and coordination, a healthy, sustainable global environment is impossible.

The United States has been deeply involved in both the evolution toward these new perceptions and the development of multilateral environmental and natural resource mechanisms. As of January 1984, we were party to 26 environmentally related international conventions and participated in over 70 specific programs carried out by some 40 international and regional organizations, commissions, and councils.

The initiatives we have taken to maintain and improve the quality of life and sustain resources in this country have set the example for other countries and for international action. We also have found that environmental degradation outside our borders and in the global commons affects this nation as directly as degradation within; and that unilateral action is insufficient. American scientists, conservationists, and political leaders have largely shaped the structure of the global environmental apparatus and, of course, our dollars have helped it to operate.

We are learning, however, that there are financial constraints to what we can do. Throwing money at environment/resource problems may not necessarily solve them. Poorly planned or implemented development is likely to do more harm than good. Smaller, well-directed environmental efforts are often more effective than unfocused, broad-scale approaches spread too thinly. But failure to spend at least some resources on protecting the environment or to integrate environmental considerations into economic development planning can be equally costly.

With the expansion of multilateral environmental mechanisms into the structure that has developed over the last two decades, as well as the vast amount of data and information being generated by global monitoring systems, a period of consolidation appears to have begun. Reviews of progress made at the beginning of the '80's and self-evaluations currently going on within the Man and the Biosphere (MAB) program, and the

United Nations Environment Programme (UNEP) in particular, are likely to lead to reorientation that takes into account the new burst of scientific knowledge or seeks to avoid overlap with other organizations on specific issues. The World Conservation Strategy is being assessed with proposals for new actions toward sustaining development.

There are also efforts, led and supported by the United States, to move forward with implementation of international conservation conventions and with action plans, especially in such areas as tropical forests, desertification, and biological diversity. Important work on guidelines relating to chemicals, hazardous wastes, and pesticides will continue, as well as efforts to protect and improve the quality of the atmosphere and seas. The knowledge being developed about natural phenomena which cause such catastrophes as El Nino will be used at least to predict them and hopefully improve their worst effects. Multilateral lending institutions and corporations are already demonstrating improved environmental awareness and taking various actions to improve their performance. Additionally, governments are making good progress toward setting priorities and initiating work on the "next generation" of environmental problems related to hazardous chemicals and other substances. Still greater efforts will have to be made to heighten awareness and initiate measures to link environmental enchancement and economic development.

The remarkable international achievements in protecting the environment and natural resources in the past two decades have been possible only through the cooperation of all nations, rich and poor, of all political and ideoligical persuasions. Environmental problems know no boundaries. The effort to cope with them has been marred by less dissension than most multilateral endeavors and, perhaps, has helped promote political harmony. There is no reason why the collaboration cannot continue. As Adlai Stevenson said in his final address at the United Nations in 1965:

> "We travel together, passengers on a little spaceship, dependent on its vulnerable reserves of air and soil, all committed for our safety to its security and peace; preserved from annihilation only by care, the work, and I will say, the love we give our fragile craft."

AN INTERVIEW WITH LARRY MASON
Mission Beyond our Borders

For an overview of the Service's international mission, Fish and Wildlife News talked to Larry Mason, Chief of the Office of International Affairs. Mason joined the Service in 1976 as the Deputy Chief of the Office of International Affairs, which was established in Spring of that year. He previously served 11 years in the Office of the Secretary, 7 of those years as staff to the Assistant to the Secretary for International Activities.

FWN: We're the *U.S.* Fish and Wildlife Service. Why do we need an international office?

Mason: Because we *do* have an international mission. The Congress, from whence we get our authority, has been recognizing that fact since the turn of the century.

We have an array of statutory, treaty and convention responsibilities that have been given to the Service for work in the international arena—from our early Lacey Act enforcement responsibilities to more current actions such as the North American Waterfowl Management Plan and, in between, everything from CITES to fishery management agreements and the extensive authority contained in the Endangered Species Act.

FWN: How have our operations evolved into ones that have truly an international scope?

Mason: Many of the resources we are charged with managing are migratory beyond our borders; or, the problems associated with maintaining populations of those resources depend upon actions that take place outside of the United States. Anadromous fisheries activity is obviously one that is complicated internationally, particularly when you look at salmon interception problems between ourselves and Canada and between Canada and the European Common Market countries.

Many of the waterfowl that we are most concerned with are increasingly dependent upon wintering habitats in Latin America and are subject to pressures not unlike those in the United States.

Some of the contaminant issues we are concerned with are related to transboundary pollution problems. We have endangered species recovery programs abroad, such as the one for marine turtles. The management of many of these resources, and hence of our mission, is inextricably tied to international concerns.

FWN: Do you feel the management of the Fish and Wildlife Service has a global perspective on resource issues?

Mason: Yes, that perspective is there. It varies in its emphasis from time-to-time. But clearly there is a recognition that our mission and responsibilities extend beyond our own borders. And in many cases, the degree to which a philosophical commitment to international conservation exists within the Directorate is related to the kind of international problems a member might be dealing with at the time. And that includes transboundary water problems in Canada, say in Region 3 or in Region 6, and certainly an array of endangered species' problems in Region 2.

For as long as I can recall there has been an international program of some sort in the Fish and Wildlife Service. It has evolved beyond the basic business of simply training foreign nationals to manage wildlife into extensive and permanent institution building abroad, and an interest in asserting our resource interests in some of the foreign policies deliberations of the U.S.

FWN: Could you elaborate on that latter point? Can you inject, within our larger foreign policy, the goals that the Fish and Wildlife Service holds? Or are you trying to foster development of that kind of concern within foreign countries?

Mason: All of the above. For example, if we become aware either through the press or through cable traffic that we receive daily from the Department of State, that a coal-fired power generating plant is going to be built in Canada, close to the U.S. border, that there are going to be no scrubbers or precipitators in that facility, and we perceive potential dangers for migratory waterfowl breeding areas, then we can and do bring our concerns to the attention of the Canadian government through the State Department. We assert ourselves through the foreign policy process to raise our concern and seek to have the impacts mitigated.

At the same time, under authorities of Section 8 of the Endangered Species Act, we encourage other governments to emphasize wildlife conservation practices, in general. Because of the large diversity of migratory species in this hemisphere, many of our actions have an element of self-interest.

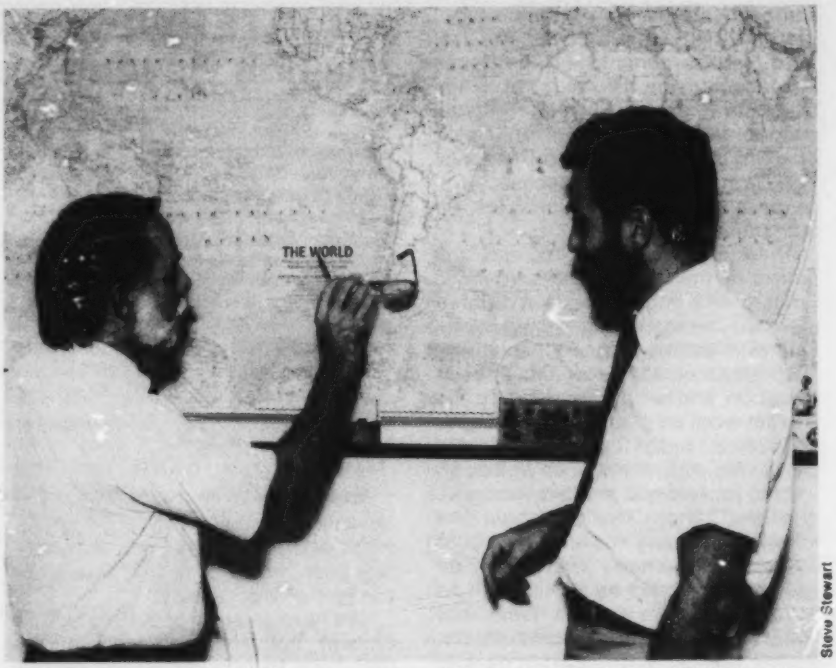
But our effort is carried out across a broad front through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), through technical assistance programs in this office, through Law Enforcement, and through the work of the Scientific Authority

FWN: You believe that the body of U.S. conservation law and existence of the programs of the Fish and Wildlife Service have, in large part, determined t' e progress that other countries have made in creating their own wildlife conservation structure?

Mason: What I am saying is that without international commitments many countries would have no national commitments. Ratification of CITES requires the establishment of a management authority and a scientific authority in order to implement that convention.

In many countries, if it weren't for the existence of that management authority there would be no agency at all within the government concerned for wildlife conservation. And so it is through tools such as CITES, the Western Hemisphere convention, and the wetlands convention that many countries get their authority to protect wildlife and habitats.

FWN: Does the larger political climate between nations influence our ability to interact with those countries on natural resource issues?



Steve Stewart

The staff of International Affairs represents a diversity of expertise on different regions of the globe. Herb Raffaele, who coordinates activities in South America, and Mason discuss the location of a project.

Mason: Except in those rare cases where there is a nation with which the United States Government simply does not have any political relations at all, such as Iran or Albania, we have been able to transcend most of the political concerns that exist in the world to get on with wildlife resource conservation work.

We have had, since 1972, cooperative work with the Soviet Union. Many programs with the Soviet Union experienced cutbacks following the invasion of Afghanistan, putting down of the Solidarity movement in Poland, and the downing of Korean Flight 007.

But through all of this period, health and environmental cooperation were mostly unaffected, and there were exchanges of information and of scientists both from the Service, other agencies in the government, and the private community with the Soviet Union.

We have, in our training of Latin Americans, conducted workshops that have included representatives all of the Central American countries and most of the Caribbean countries, except for Cuba. We have been able to work at a level where there hasn't been a great deal of political confrontation and most countries have chosen not to use environmental and conservation concerns as a political football.

FWN: Tell us how your office functions and how it brings about this type of international cooperation.

Mason: The Office of International Affairs is in transition because the Service itself is in transition. But, what we have done in the past and that I presume we will continue to do is to look to those treaties, conventions, and statutes that provide responsibilities for the Service in the international area and seek to implement them.

For example, Section 8 of the Endangered Species Act allows the Fish and Wildlife Service to take advantage of foreign currencies owned by the United States to carry on conservation programs abroad for the protection of endangered and threatened species.

FWN: I understand these foreign currencies are really debt repayments to the U.S. and are a real bonanza for you.

Mason: Indeed, and although we don't control a great deal of foreign currency, the Congress has granted us access to these resources since 1977 to finance excellent conservation projects in India, Egypt, and Pakistan. It would probably run from $5 to $6 million worth of foreign currencies. We have really clocked some achievements.

Steve Stewart

Working with numerous foreign countries can present a myriad of logistical and communication problems calling for creative solutions. Here, Mason and Lynn Overton confer on such a situation.

For example, we helped establish an Egyptian Wildlife Service and the first protected areas ever in the history of that country. Work in Pakistan and India is currently accelerating development of their programs with massive transfers of U.S. technology and establishment of permanent credible institutions for research, management, and the training of their wildlife service personnel.

Another example is the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere which dates from 1940. It was implemented by executive order and by the Endangered Species Act and funding has been made available for the last 3 or 4 years to carry out technical assistance and personnel training programs, migratory bird work, and plant conservation work throughout the hemisphere.

We also get involved in international work because the White House, as part of its management of foreign policy, will encourage the technical agencies of the U.S. Government to increase their ties with counterparts in some other government. This happened in the early 1970's when detente was developing with the Soviet Union and has happened more recently with the People's Republic of China. There is currently a team of Fish and Wildlife Service and National Park Service people in China working out the details of a cooperative program with that country.

We have new initiatives that we are becoming involved in, such as the Convention on Wetlands of International Importance, which supplement and complement our domestic efforts to protect wetlands. That convention provides a way for States that are protecting wetlands to identify those of international importance and give them a certain designation, bringing to the public's attention the fact that these wetlands have value beyond the mere State or locality where they are sited.

FWN: Tell us a little about your staff—its capabilities, in general, about its background. You have a pretty diverse group of people.

Mason: That's true.Of the nine people we have on staff, some have practical refuge management experience, some have experience in education, others have worked in Ecological Services, some have worked in other countries either as a primary base of operations or in connection with Peace Corps assignments.

Almost everybody on the staff has a second or third language, and one individual on the staff is basically a linguist and speaks Chinese, Russian, French, German, and perhaps other languages.

FWN: "Bureaucratese" is the other language.

Mason: That's my *first* language.

FWN: What are some of the pitfalls of doing the business of wildlife in foreign locales and in foreign situations with representatives of other countries?

Mason: Culture shock and being able to handle it, I think, is the first thing to get over. Once you're over that, if you speak the language and if you have a little bit of moxie, it's being able to find the right folks—in government or out of the government—to deal with. Practically, travelers have to be concerned about their stomachs.

Some have stomachs of iron and can eat anything and others can just smell the smells and have to run for the john. You have to not be too concerned about your ego or your personal image. Yet, you find yourself propelled into meetings with prime ministers and people that have got a great deal of clout in their country and there you are and you have to function.

Back here if you said something, perhaps nobody would listen, but over there they are hanging onto every word and you must choose both your words and how you use them with care. You are a representative of the United States and that may not always be the most popular thing to be, in the Soviet Union or some other places.

The last time I was in India, some dissident group fired a mortar at the U.S. Embassy, it hit the fence and ricocheted down the street but did not explode. The terrorists were fairly even-handed though because they had also fired on the Soviet Embassy the same day, and there the missile *did* explode.

FWN: Larry, what is the most unusual circumstance you have found yourself in as part of your travels?

Mason: Riding up in a tiny elevator in the embassy guest house in Cairo with a sexually curious goat was pretty unusual. And once I attended the opening of a new restaurant in Cairo as the guest of our cooperator. Outside the door, as was the custom, a cow had been slaughtered for good luck. You had to jump the blood puddles to get inside.

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PL-480: New Horizons for Wildlife Conservation

Steven E. Landfried
Wildlife Education Specialist
Evansville, Wisconsin

For most people, it was just another sunny spring morning in the Nation's capital. For this social studies teacher from Wisconsin—and some cranes in India and Pakistan—that lovely April day in 1980 was something special.

On Easter break, I had come to the East Coast in search of resources to help improve my effectiveness as a part-time public affairs officer for the International Crane Foundation (ICF) in Baraboo, Wisconsin. My stops in Washington, D.C., included the International Affairs Office of the U.S. Fish and Wildlife Service.

Two months later I was in India—watching majestic Sarus cranes unison-calling at the world famous Keoladeo Ghana Bird Sanctuary in Bharatpur.

The purpose of my initial whirlwind journey to India was to broaden awareness of the plight of the last group of Siberian cranes known to winter in the Subcontinent—then only 33 in number. Packing up my teaching tools, I went on the road and adapted to the rigors of a mobile classroom. In the process, I was treated to a veritable geography lesson. Bombay, New Delhi, Derra Dun, and Jaipur quickly became more than mysterious names on obscure maps for me.

I spent hot, humid, and hectic weeks in June and July 1980 giving talks, slide shows, and interviews to any willing Indian ears. Audiences included high-level government officials, conservationists, wildlife trainees, members of the press, and school children.

Stories about the perilous status of India's remnant population of Siberian cranes soon appeared throughout the country. In addition, official concern about the dubious condition of their wintering ground was elevated and the sanctuary eventually nationalized.

By 1981, my curiosity about the mystery surrounding the Siberian crane's undocumented passage between Bharatpur and Lake Abi-Estada in Afghanistan led me to Pakistan.

Correspondence with T.J. Roberts, Pakistan's preeminent bird authority, soon established the presence of a quaint form of live crane catching along likely Siberian crane migration routes. Worried about the implications of the hunting for endangered Siberian cranes, Roberts invited me to share mutual concerns with provincial authorities, wildlife officials, the government board of the World Wildlife Fund-Pakistan, and the media.

This invitation came at a time when the International Affairs Office was seeking to reestablish Pakistani contacts put on hold by diplomatic fallout from Carter administration nuclear proliferation policies. Thus, International Affairs decided to again draw on its Pakistani rupee accounts and allow me to include the country on my itinerary when I returned to India in the winter of 1981.

Preliminary investigations to remote areas along the Kurram River in the North West Frontier Province in the fall of 1982 found crane catching to be growing in popularity. Indeed, the sport had reached such magnitude as to suggest the need for immediate intervention. As a result, I took unpaid leave from second-semester teaching duties to act as a catalyst for research, educational, and publicity activities in Pakistan and India.

Steve Landfried

Dr. Steven Landfried (right) shown in local dress with a Pathan crane hunter. Dr. Landfried recently received a distinguished service award from the National Association of Environmental Education for his efforts in educating northern Pakistanis about threats to migrating cranes by extensive crane hunting.

Without the personal resources or the time to compete for limited monies available through private or international funding sources, I found these worthwhile activities accessible to me only because of administrative support and guidance from the International Affairs Office of the Service and foreign currency exchange funds available to it in India and Pakistan.

The investment has paid dividends on several fronts: public education, research, and conservation. In India and Pakistan, awareness of the plight of the Siberian crane, and the wetlands on which it and other creatures depend, has been greatly expanded by the popular press, professional journals, radio, and television. Both countries have issued Siberian crane stamps to further dramatize official concern about the bird. An audio-visual program—"Cranes of the Subcontinent: Great Birds of Peril"—produced in cooperation with the International Council for Bird Preservation, the International Centre for Conservation Education, and the World Wildlife Fund-Pakistan, is being distributed to a wide range of audiences.

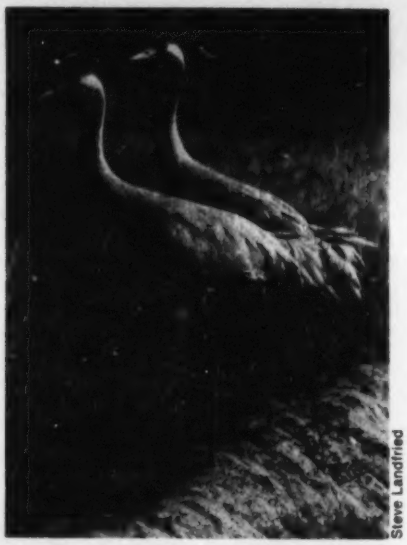
Several research developments have occurred. An extensive questionnaire was administered to more than 900 crane hunters in Pakistan in 1983 to better understand hunting practices, care of captured cranes, and factors motivating hunters to throw lead-weighted cords (solas) at elusive birds on stormy nights.

Banding and release of wild-caught common cranes (*Grus grus*) and Demoiselle cranes (*Anthropoides virgo*) has also been tried on a pilot basis with selected groups of hunters. The curator of the bird collection at the National Zoo in Washington, Charles Pickett, journeyed to Pakistan with Dave Ferguson and myself in April 1984 to study the captive breeding of cranes in the Kurram Valley.

In India, a Sarus crane count was organized by the Keoladeo Ghana Natural History Society at the national park in Bharatpur for the first time in 1983. Now an annual event, it

Steve Landfried

Four Pathan crane hunters twirl their "soia" before launching them skyward at passing cranes in the last stage of their landing spiral. This photograph was taken in the North West Frontier Province near Bannu, Pakistan.



Steve Landfried

A pair of semi-domesticated common cranes stands alert on an earthen mound between wheat fields near Lakki in remote northern Pakistan.

brought park staff, Bombay Natural History Society personnel, faculty and students at the local college, and school children together for an enjoyable cooperative activity with educational and research components. Elsewhere, wildlife department staff conducted ground surveys in 1984 and 1985 for Siberian cranes at potential stopover spots along likely migration routes.

Conservation efforts in India focused initially on addressing problems at the sanctuary in Bharatpur. Since its nationalization, focus has shifted to management issues and concerns about the status of the Sarus and other cranes. In Pakistan, crane hunting laws passed in 1984 restricted crane hunters for the first time. With that achieved, concern shifted to the challenges of enforcing the new codes and improving hunters' awareness of their rationale.

This work has not occurred in a vacuum. Indeed, these crane conservation initiatives have produced nu-

PL-480: The Foreign Currency Program

David A. Ferguson
International Affairs
Washington Office

The question is usually there; sometimes asked suspiciously, sometimes bursting forth when curiosity can no longer be contained: "Why is the U.S. Fish and Wildlife Service involving itself in India—or Pakistan or Egypt—for crying out loud?" This is generally followed by the thought, "How can you justify spending money in those countries when there are insufficient funds to adequately manage resources in the U.S.?"

Fair questions. My response follows: While the Fish and Wildlife Service is a domestic agency with primary responsibilities for protection and management of wildlife resources within the United States, it has also been given significant international responsibilities to complement its domestic role. The most pertinent directive for international work is the Endangered Species Act of 1973 which mandates the Service to determine the status of threatened and endangered species worldwide and to engage in programs with other countries to enhance the status of those species and their habitats.

My answer to the question about spending money abroad when domestic programs are hurting consists of an explanation of PL 480 Funds.

The U.S. Congress built a provision into the Endangered Species Act to tap into foreign currency funds owned by the U.S. Government, wherever they were available, to carry out the international terms of the Act. These currencies accumulate through the sale of surplus agricultural commodities under the Agricultural Trade Development and Assistance Act of 1954 (Public Law 83-480) and through the repayment of loans. They cannot be converted into dollars or other currencies and must be spent within the country of origin. Generally monopolized by U.S. embassy needs, a portion of the funds may be declared "excess" by the U.S. Treasury whenever the amount held is sufficient to meet all U.S. Government requirements over a period of 2 years. The excess funds, commonly referred to as PL 480 monies, may then be applied to optional assistance programs.

The Service uses these excess foreign currencies to fund wildlife conservation programs in other countries in order to carry out its responsibilities under the Endangered Species Act. When we first requested authorization from Congress to utilize these funds, it was for India, Pakistan, and Egypt, since together these countries had nearly 100 animal species on the U.S. List of Endangered and Threatened Wildlife. We have continued to work in these three countries while often exploring the chances of expanding into others (such as Poland) when monies become available.

The funds are "no-year monies" (not tied to a specific fiscal year), so their use can be extended over time.

cont. on p. 33

merous spin-off benefits, including:

- Providing a model for incorporating educational and publicity activities into wildlife research in rural areas;
- Opening doors for other professionals interested in conducting wildlife research or training activities in Pakistan;
- Broadening the purview of people in the subcontinent and the United States about dependence of migratory birds on international habitats;
- Establishing useful contacts which have lead to the training of promising foreign nationals in the U.S.;
- Promoting better cooperation between government and private groups on environmental protection;
- Increasing interest in other parts of the world in the state of wildlife in the subcontinent.

What lies ahead?

Steve Landfried

As Mumtaz Malik, Conservator of Wildlife for the North West Frontier Province, demonstrates crane banding techniques, a crane hunter suddenly lowers his shotgun at a stray crane flying overhead. The Pathan hunter was quickly dissuaded from firing.

Steve Landfried

The first common crane ever live-caught, banded, and released waits anxiously near the Baran Dam. Its beak has been tied to avoid injury to handlers during transport.

The current draw-down of rupees accounts and the recent departure from the scene of key supporters of crane conservation measures in Pakistan has reemphasized the importance of develping a research system that will promote research activities and conservation policies long after PL-480 monies have been exhausted.

Efforts are now underway to recruit promising academicians in India, Pakistan, and Nepal to conduct their own research and to train students to do ground surveys, migration or habitat studies of benefit to cranes and other migratory birds, and wetlands evaluations. Additional attention will be directed to working with government officials and indigenous conservation groups to build on the growing environmental awareness in the region. At some point, it may be feasible to add researchers from Pakistan and Nepal to the ranks of Indians who have received training at ICF and other facilities.

An important foundation for crane conservation has been established in the Indian subcontinent because of the PL-480 program. With luck, governments, conservation groups, and universities in the respective countries will begin to regularly commit resources for continuing this effort.

Working with a Federal agency has been an interesting experience in itself. Among the things this bureaucratic neophyte has found interesting are: the process whereby the International Affairs Office attempts to define and maintain its niche in a domestic agency which in turn operates within the framework of the Interior Department; the biennial struggle of the Fish and Wildlife Service to explain to new congressmen why foreign exhange rupees should be included in the Federal budget; the various dimensions of interactions required with the State Department on international projects; the territoriality of various U.S. international agencies; differences in the styles and scope of operation of American consulates, consuls general, and embassies—and the manner in which scientific matters are handled at different levels; as well as the life of career foreign service staff.

In any case, the PL-480 program has opened up new horizons for researchers and educators interested in the fate of cranes and other wildlife of the Indian subcontinent. The U.S. Fish and Wildlife Service has every reason to feel very proud of the catalytic functions being served so admirably overseas by its International Affairs Office.

Some Helpful Hints on Foreign Travel

"My 'foreign' travel was spent in the Detroit airport waiting for the fog to lift. I later learned that only half the attendees succeeded in getting to Toronto and the meeting was shortened by one day. After waiting eight hours and learning of the shortened meeting, I decided to return home. The cold I caught in the Detroit airport cost me an additional day and a half of sick leave. In summary; it was a real bummer!"

Most overseas business trips by Fish and Wildlife Service employees are far more successful than this travel report indicates. However, taking a trip out of the country isn't as simple as getting your boss' approval and good weather. There are a few easy steps to follow prior to departure.

For this special issue, *Fish and Wildlife News* asked International Affairs' Program Analyst Sharon Clark to explain the steps necessary when planning a business trip overseas.

FWN: Can you give a brief overview of International Affairs' role in arranging foreign travel?

Clark: International Affairs must review all foreign travel requests for Fish and Wildlife Service employees. Employees should realize that foreign travel isn't only travel overseas. It's also travel to Canada and Mexico, and any international meeting where more than one person attends. It's this office's responsiblity to make sure all requests are coordinated and put into one package. This avoids forwarding other requests 5 days or 2 weeks after the first one is approved.

FWN: How far in advance must International Affairs be notified and what procedures should be followed?

Clark: We require that the request for foreign travel be submitted to this office *30* days in advance. However, if more than one Service employee will be attending, a minimum of *45-60* days should be allowed because Regional and Washington offices must coordinate additional participation.

Employees must submit a *Memorandum of Justification*, a Certification of Foreign Travel (*DI-1175*), and a Travel Authorization (*DI-1020*). These are reviewed by International Affairs and then forwarded to the Director, the Assistant Secretary for Fish and Wildlife and Parks, and the Assistant Secretary for Territorial and International Affairs for approval. Let me point out that the Assistant Secretary for Fish and Wildlife and Parks must receive travel requests at least 5 days prior to departure or the trip will automatically be denied.

The Memorandum of Justification must state clearly the purpose of the trip, how the employees will benefit, how it pertains to the job, and how the U.S. Government will benefit. It should then be forwarded to International Affairs along with the DI-1175 (Certification of Foreign Travel), and the DI-1020 (Travel Authorization) signed by the approving official. A problem we have had in the past has been with the completion of the DI-1175. If more than one person is traveling, block #10 of the DI-1175 must contain the additional names.

FWN: Once these three items are completed, is it possible to make changes and, if so, what procedures should be followed?

Clark: In a lot of cases, we do have to substitute people. A request for changes should be forwarded to this office as soon as it is known. If the travel has not been approved, we pull the package and substitute one person for the other. If travel dates change, a request to change the dates is submitted. This office then notifies the appropriate offices. The itinerary supplied must include the exact dates and places to be visited. This office forwards this information to the Security office, which has responsibility for tracking all Interior employees traveling overseas.

FWN: If advance notification is not possible, are all trips denied?

Clark: Yes, unless there is a strong justification for missing the 30-day deadline. For example, a last-minute request for attendance can be justified if it can be shown there was no prior knowledge of the trip.

FWN: What must Service employees bring with them when traveling?

Clark: In most cases, it is necessary to have a *passport*. They can have an official (red) government passport, which is obtained through the Interior Passport Office, or a regular tourist (blue) passport. And some countries require *visas*. The Interior Passport Office coordinates this requirement and travelers should deal with that office directly.

FWN: If the employee already has a tourist passport, is that enough?

Clark: Usually. At one time, however, employees were required to use a government passport when traveling on official business. But now with all the terrorist activities, it's not a requirement. No specific requirement has been set; however, the passport office recommends using a government passport. It's hard to know. In places like Mexico and India, it is recommended one have a government passport. When going out of the country, it is sometimes recommended to check with someone who has traveled to the country in question. Someone else's experiences could be beneficial.

FWN: Must employees submit trip reports upon return?

Clark: Yes, there is a Departmental requirement for a trip report. A copy of the trip report also should be forwarded to Intenational Affairs.

FWN: Can you give us a checklist for foreign travel and possibly some words of caution?

Clark: Don't wait until the last minute! Everyone should make sure they have a *passport*. If they don't, they shouldn't wait until their travel is approved to get one. As soon as planning begins, an advance copy of the *1175* should be sent to the Interior Passport Office. If a visa is required, the passport office will forward the necessary paperwork needed to get one. If you have any questions, it is better to call us first.

Fish and Wildlife News appreciates these travel preparation tips. Intenational Affairs can help smooth your foreign travel arrangements, so let them guide you through what might be unfamiliar terrain. Then, call the weather report! Good traveling.

The Western Hemisphere Program

Larry Mason and Herb Raffaele
Office of International Affairs
Washington, D.C.

In October 1940, the eyes of most Americans were focused on the growing conflict in Europe. But a small group of conservationists from Latin America and the United States had their eyes focused on something closer to home—a meeting in Washington to discuss the protection and preservation of wildlife.

The result of this gathering was a document known as the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, commonly referred to as the Western Hemisphere Convention (WHC). The WHC provided for the establishment of national parks for public education and enjoyment, nature reserves for plant and animal protection, nature monuments for strictly controlled access and research, and wilderness areas closed to commerce and motorized entry. It also provided for coordinated migratory bird management and for control over the take of protected species through regulated permits for import, export, and transit of protected flora and fauna and their parts. It opened the way to cooperation and assistance in research and field studies and for the sharing of scientific knowledge.

Within the WHC were the seeds of our current wilderness legislation, the biosphere reserve concept, the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), and the principles of public use management. President Franklin D. Roosevelt signed the WHC on April 15, 1941 by which time events in Europe and the Pacific left little time for wildlife conservation and, in fact, as the Service and other agencies moved their headquarters inland to Chicago, the war effort consumed the city of Washington.

Herb Raffaele

South and Central American rain forests provide vital wintering habitat for many species of North American birds. These forests are disappearing at an alarming rate.

Despite the fact that attention was drawn away from the WHC during the course of the war, increasing numbers of Latin American nations came to endorse it. Today, there are 18 signatories. Unfortunately, it was over 40 years after the U.S. signing of the WHC that funds were allocated to initiate its implementation. For each of three fiscal years (1983-1985), Congress appropriated $150,000 as an add-on to the U.S. Fish and Wildlife Service budget to take steps to implement the WHC which would include but not be limited to:

- Developing personnel resources and programs to facilitate implementation of the Convention;
- Identifying species of birds that migrate between the U.S. and other Western Hemisphere nations, identifying the habitats of these species, and implementing cooperative measures to ensure that these species do not become endangered or threatened; and
- Identifying measures to address the protection of wild plants.

The necessity of the WHC beomes evident when one considers some important facts. For example, migratory birds know no geographic boundaries. They are primarily a shared international resource that must be managed accordingly. Approximately half of the species of birds native to the US. winter in Latin America. In fact, some forests in Mexico support more migrant birds from the U.S. than they do local species.

Breeding populations of several species of migrant birds appear to be declining as a result of wintering habitat reduction which causes wintering migrants to concentrate in more limited geographic areas. The unplanned destruction of tropical forests, the preferred wintering habitat for many species of U.S. migrants, has accelerated to a pace unparalleled in human history. At the present rate, the world's rain forests will be gone in a matter of decades.

Although the amount of land placed in a protected status in Latin America has increased ten-fold over the last decade, the number of

trained wildlife managers working in the region has grown by less than one-third. Thus, the fundamental goal of the Service's Western Hemisphere program is the establishment of a cadre of well-trained wildlife and wildlands biologists in each member country. This group of professionals is essential for setting local priorities, guiding their implementation, promoting the development of a local conservation ethic, and basically moving each country forward from within. No other type of U.S. effort to assist in WHC implementation is as important as the support of training; and, without effective training, many other possible activities will substantially lose their effectiveness.

To achieve this goal, the U.S Fish and Wildlife Service has either initiated or become active in already existing stateside workshops, seminars, and graduate studies relating to natural resource conservation. An effort is presently being made to shift this training away from U.S. centers and into Latin American institutions.

The program is also placing increased emphasis on establishing a limited number of comprehensive and high quality training programs rather than a large number of narrowly focused and brief activities. It is felt that a well-established institution can more effectively spin off small workshops and seminars than vice versa.

At the core of the Service's training effort is the development of regional training centers in wildlife management. The first such center, the main component of which is a graduate program in wildlife management, is now being established in Costa Rica primarily to serve Central America. (See article this issue by Chris Vaughn.) Also, Service personnel are helping to establish a similar program at the University of Minas Gerias in Brazil to serve South America.

The Service hopes ultimately to incorporate into this program other elements which are basic for training wildlife managers. Most important among these is the development of a well-managed reserve or refuge, incorporating a variety of habitats, to which managers from protected areas throughout the region can come for internships. These internships might consist of six-month to one-year stints in a capacity equivalent to that of an assistant refuge manager, refuge biologist, or public-use specialist.

In addition to the establishment of regional training centers, the Service supports numerous Spanish-language seminars and runs workshops on migratory bird conservation techniques and on the management of wildlife refuges. The Service also actively provides technical information and other materials on faunal and floral conservation to numerous institutions throughout Latin America.

In the long run, if we ever hope to see effective conservation of wildlife and plant resources in the Neotropics, resources which include many North American migrants, a much more comprehensive program than that presently under way will have to be initiated. One fundamental element of such a program must be the establishment of additional training centers similar to the ones being developed in Costa Rica and Brazil to serve other major regions such as the West Indies, the Andes, and Patagonia. Each of these regional training centers would have associated with it a university which possesses effective ties with local natural resource agencies and conservation groups, a data or documentation center for information compilation and distribution, a wildlife reserve containing a diversity of habitats where practical management techniques can be learned through hands-on activities, and an experimental station where studies on captive wildlife, cultivation of endangered plants, and other experimental research projects can be performed.

The Service's Western Hemisphere program has taken only the first steps in this direction.

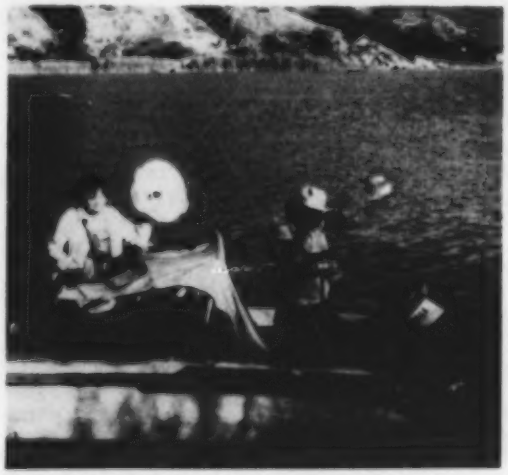
For a copy of Faunal and Floral Conservation in Latin America and the Caribbean: A Report to Congress on Implementation of the Western Hemisphere Convention (September 1985), contact the Office of International Affairs, Room 2441, U.S. Fish and Wildlife Service, Department of the Interior, 18th and C Streets NW., Washington D.C. 20240.

More than half of the species of birds native to the United States winter in Latin America.

Marshall Howe, a research biologist in the Migratory Bird Management Office, conducts field training on Wallops Island in Virginia as part of a migratory bird workshop.

Red footed booby—chick. This tropical aquatic bird lives in the Caribbean, but sometimes wanders as far north as the Gulf of Mexico.

The magnificent frigatebird, a subtropical and tropical sea bird, is commonly seen in the Florida Keys and on several Caribbean islands.



photos by Herb Raffaele

Biologists use radiotelemetry to track the endangered giant (or Atitlan) grebe on Lake Atitlan in Guatemala.

Graduate Program —A First in Latin America

Chris Vaughn
Wildlife Biologist and Professor
School of Environmental Sciences
National University of Costa Rica

The management and conservation of wildlife in the Central American and Caribbean regions is confronting a series of challenges related to the conflict between diminishing natural resources and the increasing needs of a burgeoning human population which historically has not displayed a strong conservation ethic. National wildlife institutions must respond to these challenges not only to ensure the continued existence and wise utilization of the wildlife resource, but also to establish significant influence within the policy-making structure of their respective governments.

Although wildlife legislation exists in all countries of the region, implementation of management programs has been hindered, in part, because of limited research and lack of effective information exchange on wildlife issues between countries.

Because of the urgency to improve communication concerning wildlife management and to learn of the present status of wildlife in the region, the U.S. Fish and Wildlife Service and the World Wildlife Fund-U.S. co-sponsored the Second Centroamerican Meeting on Wildlife in Panama in October 1984 with the assistance of wildlife agency heads from Panama, Costa Rica, Nicaragua, Honduras, El Salvador, Guatemala, and the Dominican Republic. One of the priorities identified at this meeting was the initiation of a graduate program in wildlife management at the National University of Costa Rica (UNA).

This graduate program is scheduled to begin in February 1987 and will be the first such program in the entire Latin American region. The principal objective of the program is to increase the number of wildlife professionals in Latin America who have special knowledge and expertise in their home regions. Students will learn to plan and develop research and extension programs for wildlife and habitat management and to work closely with professionals in other natural resource disciplines in regional and national development strategies.

The first class admitted to the graduate program will consist of 10 students, most selected from wildlife agencies and universities in the Central American region, and others selected from applications which have been received from Mexico, Colombia, Ecuador, Peru, Bolivia, Paraguay, and Chile. Priority will be given to those candidates who work in wildlife agencies or universities and are assured of employment upon return. Scholarships are being provided by several international agencies, including the Service and WWF-US.

Incoming students will be given a placement exam and may be required to take two quarters (11 weeks each) of undergraduate wildlife courses before being admitted to the graduate program. The graduate program course credits are given in advanced research topics which will provide the student a unique opportunity to design and carry out creative and innovative projects, under the supervision of a staff member.

In addition, there is a group research and extension project of 9 weeks duration in which students will analyze the biotic, physical, and human resources of a wildland area and its surrounding human population to elaborate a management document for the area. A sociologist, wildlife biologist, land use planner, and wildland specialist will participate with the students in this exercise.

Thesis work will be initiated after the graduate courses and 9 week project are completed and a thesis proposal is successfully presented and funded. Preferably, students will undertake thesis projects in their home countries. This approach has the advantage of reestablishing strong contact between the student and home country institutions as rapidly as possible. It also serves to meet research needs throughout the region and to make the student more in demand at home due to his or her increased expertise relating to an issue of local importance.

Six research sites will be utilized in Costa Rica, most within wildlife refuges. A management plan is currently being drawn up by UNA and Costa Rican Wildlife Service (CRWS) professionals for a wildlife refuge which has over 300 people utilizing the natural resources within. The CRWS and UNA have worked together for over six years and have signed legal agreements for the use of wildlife refuges by students and professors of the program. The agreement also provides for general technical assistance and cooperation in writing management plans. At present, more than 20 technical reports and scientific articles are published yearly by the wildlife group, which has teaching, research, and extension experience in Costa Rica dating back to 1975.

The graduate program is taking advantage of excellent resource people from the Organization for Tropical Studies and the Smithsonian Institution in Panama, the Veterinary Medicine School, and the Biology school of the UNA. Such persons will act as visiting lecturers or advisors for students' theses and individual research topics.

Long-term goals will emphasize wise natural resources use involving animal populations, their habitat, and the human user. Much work will be carried out with rural human communities. The plan to train students to cope with real situations which they will face upon return to their home countries is of utmost importance for the success of the program.

Foreign Travel: The Trials and Tribulations

Sometimes hitting the road can be a pain. As an example, the following was excerpted from a trip report by Steve Cornelius, international coordinator for a regional graduate program in wildlife management at the Costa Rican National University. The Service is actively involved in this effort.

The trip did not get off to a very auspicous start. Costa Rican migration authorities refused me permission to leave the country because of an obscure stamp in my passport pertaining to my car. It took a day to get this stamp (which should not have been in the passport in the first place) removed. The fact that the stamp had not impeded my earlier trip to Guatemala led me to believe (naively) it would have no effect on subsequent ones. Such is life in the tropics.

This delay greatly affected the first two days of my stay in Panama. Two meetings had to be cancelled. The local trip coordinator could not meet me at the airport as he was plugged into an inflexible schedule. His secretary directed me to a hotel located in a section of town where the usual client had need of the establishment for only an hour or so at a time. More serious was the in-

Latin American Workshops Provide Cross-Cultural Experience

Jerry Touval
International Affairs
Washington Office

If you ever have occasion to walk into the terminal at Washington National Airport and see someone holding a sign that says "Servicio de Pesca y Vida Silvestre," you can be reasonably certain you have arrived just in time for the beginning of one of the Office of International Affairs' Latin American workshops.

This cross-cultural phenomenon is visible only twice each year—in May for the beginning of the "Workshop on Research, Management, and Conservation Of Migratory Birds in the Western Hemisphere" and in September for the "International Workshop on the Function and Management of Wildlife Refuges."

Take for example the start of the May 1985 Migratory Bird Workshop which, though conducted by the Service, receives support from Ducks Unlimited, World-Wildlife Fund-US, and the National Audubon Society. Twelve up-and-coming ornithologists from 10 countries (Argentina, Bolivia, Brazil, Costa Rica, Dominican Republic, Ecuador, Guatemala, Peru, Uruguay, and Venezuela) arrived on different flights, many for their first time in the U.S., and many speaking little or no English.

The little sign in the airport was their first link with the U.S. Fish and Wildlife Service. After being greeted, they were taken off to their hotel in suburban Maryland, and spent the next 4 weeks learning from Service and outside experts about the Service's Bird Banding Lab, management of shorebirds and colonial waterbirds, raptor census techniques, environmental contaminants, forest passerine inventory methods, environmental education, and many other topics.

Most of the workshop took place at the Patuxent Wildlife Research Center, but included field trips to Chincoteague and Blackwater National Wildlife Refuges, and the National Zoo's Conservation and Research Center in Front Royal, Virginia.

Of course, time spent in lectures and field exercises was not the only benefit to be derived from taking part in the course. Valuable contacts with Service researchers and representatives of private conservation organizations has led to ongoing professional relationships that have since proved useful to both the Latin American and United States scientists involved.

Other benefits for the Latin Americans are unlimited access to pizza and French fries, news of the latest developments on "Dynasty" ("Dinastia"—since their episodes are 2 years behind ours), and a sampling of North American beers, which everyone agreed were weak compared to those south of the border.

Forget about the coffee—"Nescafe" couldn't make it in Bolivia. To make up for the caffeine deficiency, each participant brought one pound of coffee. Brazil won my honors for the coffee most reminiscent of diesel fuel.

May of 1986 marked the fourth year of the migratory bird workshop. As a result of these projects, we have begun to build a group of Latin American ornithologists who are communicating their ideas and achievements in avian conservation. They even have developed a newsletter called *El Volante Migratorio* ("The Migratory Flyer") which is published by a workshop graduate, and many articles are contributed by former workshop participants.

We in the Office of International Affairs view this as an example of positive progress towards establishing a more effective world conservation community.

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operative phone system. I moved out two days later, just hours before a bomb exploded in the building next door.

Of greater impact was the general upheaval in the country as a result of separate strikes or work slowdowns by banana workers, doctors, and other medical workers, oil refinery workers, and, finally, by everyone else who didn't fall clearly into one of the previous categories. This turned out to have been a very inopportune time to visit Panama.

Though the first strike was of little consequence to me and, fortunately, the second likewise (all hospitals were essentially closed), the other two did adversely affect the trip. Few filling stations were open, so most of the planned visits to the field were cancelled for lack of gas.

It was only because our guide, Fernando, had friends manning the pumps at one station that he was able to get more than the 3 gallon limit. Thus we were able to visit areas of interest in the old canal. Most public and private offices, including the University, were either closed or had very irregular hours as a result of the general strike.

Jerry Touval

Christopher Cox, a student from the Caribbean, bands a semipalmated plover during the 1986 migratory bird workshop held at Chincoteague National Wildlife Refuge.

Egypt: A Personal Perspective

Jim Gillett
Refuges and Wildlife
Washington Office

So you want to broaden your horizons—how about a trip to Egypt to assist in a development proposal for an area around Gebel Elba? Gebel (meaning mountain) Elba is located along Egypt's southern border adjacent to the Red Sea. The Service was a participant in this project, with representatives of the Egyptian Wildlife Service and World Wildlife Fund. If successful, it would persuade the Government of Egypt to accord the area some type of protected status. I was to represent the Service as a "park planner."

In order to be successful, such proposals nearly always have to have an immediate financial "payback,"—hence, the need for a park planner to address developments needed to make the area accessible and attractive to the public and yet preserve its unique features.

Egypt, in my experience, is a land of extreme contrasts, and visiting it, albeit very briefly, gave me an opportunity to sample some of these.

The stage was set as soon as I arrived at the Cairo airport. The plane was met by armed guards dressed in black. I suspect the submachine guns were not loaded but I never had the courage to ask. Language is a problem as are the multitude of beggars that meet you as you leave the airport. I learned in a wild ride to downtown Cairo that, in addition to tires and a steering wheel, a critical part of every vehicle is the horn.

The contrasts between the well-to-do Egyptians (there are proportionally more Mercedes in Cairo than any other vehicle) and the lowest income level (there are also more horse-drawn carts that jockey for the right-of-way with the Mercedes) boggles my mind. Sound the horns! !

Cairo is located in the Nile valley, which has been accurately characterized as a ribbon of green in stark contrast to the surrounding endless expanse of brown desert. Leaving Cairo and flying to the Red Sea coast, one gets a bird's eye view of the endless sands of the desert. A brief couple of hours permitted me to snorkel on some Red Sea coral reefs. Again the contrast—beautiful undisturbed coral reefs, clear blue waters (so blue the reflection on terns and gulls made them appear to have blue bellies), yet every beach was covered with tar balls and insidious plastic containers, plastic sheeting and light bulbs.

On the the real meat of the trip—our caravan of three vehicles headed south. After three sleepless nights (jet lag), we stopped at a "local" motel for the night—an abandoned locust control rest house in Quesir. Sleep came easily until religion startled me awake at 3 a.m. Quesir's one concession to the modern world is a loud speaker system for the whole city so chantings from the mosque are available to all residents, day and night.

As we traveled south, we quickly entered a far more primitive environment—no gas stations, water, electricity, or motels. The only grudging concession to the modern world was a paved road.

Gebel Elba is located in disputed territory. Both Egypt and Sudan claim the area, but fortunately, it's not worth fighting over at this time. Nonetheless, there were numerous road blocks where our passes were checked by the Egyptians and after a scant few additional yards, by the Sudanese.

Of course, the sentries were all armed—some moody, some easy going, and some wanting to search our vehicles until told that there was a horned viper in one of them (confined in a bag—but this was not part of the message).

The Besharin (the local tribe of Bedouins) that use the Elba area are very friendly and sociable. Everywhere we stopped we were offered tea. The procedure was always the same. A blanket or tarp is spread on the ground, a small tea pot is heated over a wood fire, and then a very sweet tea is served in a shot glass. Small talk follows and/or deals are made.

Some Besharin live in villages and have given up their traditional nomadic life style, but many continue to be wanderers, grazing sheep, goats, and camels.

Their homes are animal skin tents—no radios, schools, autos, medical assistance, land ownership or fenes; but in spite of all they lack, they are a bright, happy, enjoyable people. The women and children herd the cattle, the men draw the water from widely scattered deep wells, usually during the morning or evenings, and the rest of the day is spent discussing more worldly things.

It is clear that the Besharin are fantastic observers of wildlife. The expedition hired a local Besharin guide and cook, and we all quickly went "native." We slept under the stars. It was the only place I had ever been where the sounds of man are totally absent at night—no planes, automobiles or radios—just the sound of the land. We ate with our fingers, and a fried native bread was a staple of every meal. Water was severely rationed, and there were no cold foods (the biggest adjustment was gin and tonic with no ice). Fresh meat was brought on-the-hoof (alive) until mealtime.

Many wildlife observations were made and the expedition visited a large part of the Elba area, including mangrove forests along the Red Sea and a number of off-shore islands.

During the field work, it became clear that the area will not be able to sustain its resource values or the nomadic lifestyle of the Besharin if it is developed to accommodate large numbers of tourists. In addition, the cost of facilities to handle tourists is simply beyond the capability of the government at this time, given the broad attractions of Egypt's archeological sites and several sun-and-sea tourist areas already available in the country.

The team recommended that the area be set aside as a "protected area" with the following major objectives: 1) preserve the fauna and flora, 2) preserve the nomadic Besharin lifestyle, and 3) continue further research and study.

Obviously, my function as a park planner turned out to be a non-function because public facilities in the immediate future were not a part of the team's final recommendations.

A report was prepared and submitted to the government of Egypt and with unparalleled speed, the entire area was declared protected on April 4, 1986.

A Growing Conservation Ethic in Egypt

Dave Ferguson
Office of International Affairs
Washington Office

Egypt was a cradle of early human civilization. Wild plants and animals, and later domesticated versions, sustained those civilizations. Recognition of this dependence often led to veneration. The cat, ibis, crocodile, falcon, and hippopotamus were only a few of the animals deified by the ancient Egyptians.

Regrettably, somewhere between the Pharaonic times and the 20th Century, Egypt lost its identity with its wildlife. Pressures of human development seemed to allow no considerations for the living natural resource heritage which had sustained and supported this development in the first place. Many species of wildlife disappeared and many others were threatened with extinction.

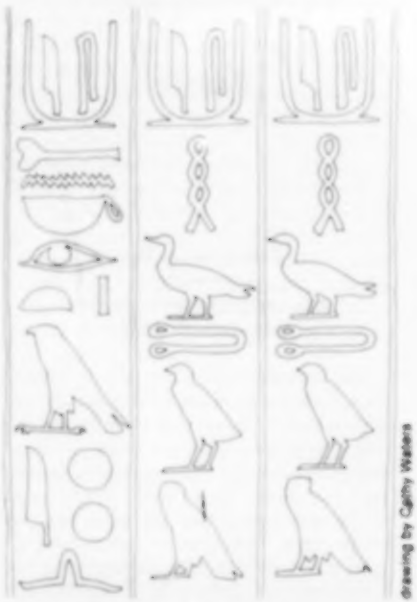
Prior to 1960, Egypt's recognition of wildlife included some general legislation for the protection of birds important to agriculture and an organizational responsibility (on paper) for wildlife management by the National Zoological Gardens at Giza within the Ministry of Agriculture. Enforcement of hunting and game laws was the mandate of another Ministry but there appeared to be little interest in carrying out this mandate on a regular or effective basis. No strong governmental impetus or policy for rectifying this situation existed.

There was, however, a handful of individuals within and outside the Egyptian government with an environmental awareness and a concern for the need to develop programs dealing with ecological and conservation matters. This group felt that conservation programs should be linked to economic and social development. They stressed the need to conserve genetic resources for possible future utilization in agricultural production, including both floral and faunal considerations, and concluded that the establishment of intensively managed areas where wild species could be protected was one of the most appropriate methods for achieving their conservation goals.

The return of the Sinai to Egyptian rule, which began in 1979 and was completed in the spring of 1982, brought a new awareness of the peninsula's natural resources and tourist development potential. Biological information on the area's resources, compiled over the previous decade largely by the Israelis, had identified at least five major ecosystems in the Sinai with areas worthy of consideration as nature reserves. The Governor of South Sinai established two protected areas in 1980—the Ras Mohammed with its spectacular coral reefs and the mountain area of Mt. Musa and Santa Katherina.

The most significant action concerning the welfare of species and the protection of habitat at the national level occurred in 1983 with the passage of a law on the establishment and management of protected areas. Following the passage of this law, the Prime Minister issued a decree declaring the Ras Mohammed area of South Sinai Governorate, as well as the two islands of Tiran and Sanafir in the Gulf of Aqaba, as Egypt's first natural protectorate.

Nine additional areas were identified by the 1983 law for natural protectorate status, and by June 1986, four of these had been approved by the Prime Minister (one more in Sinai and three in mainland Egypt).



drawing by Cathy Waters

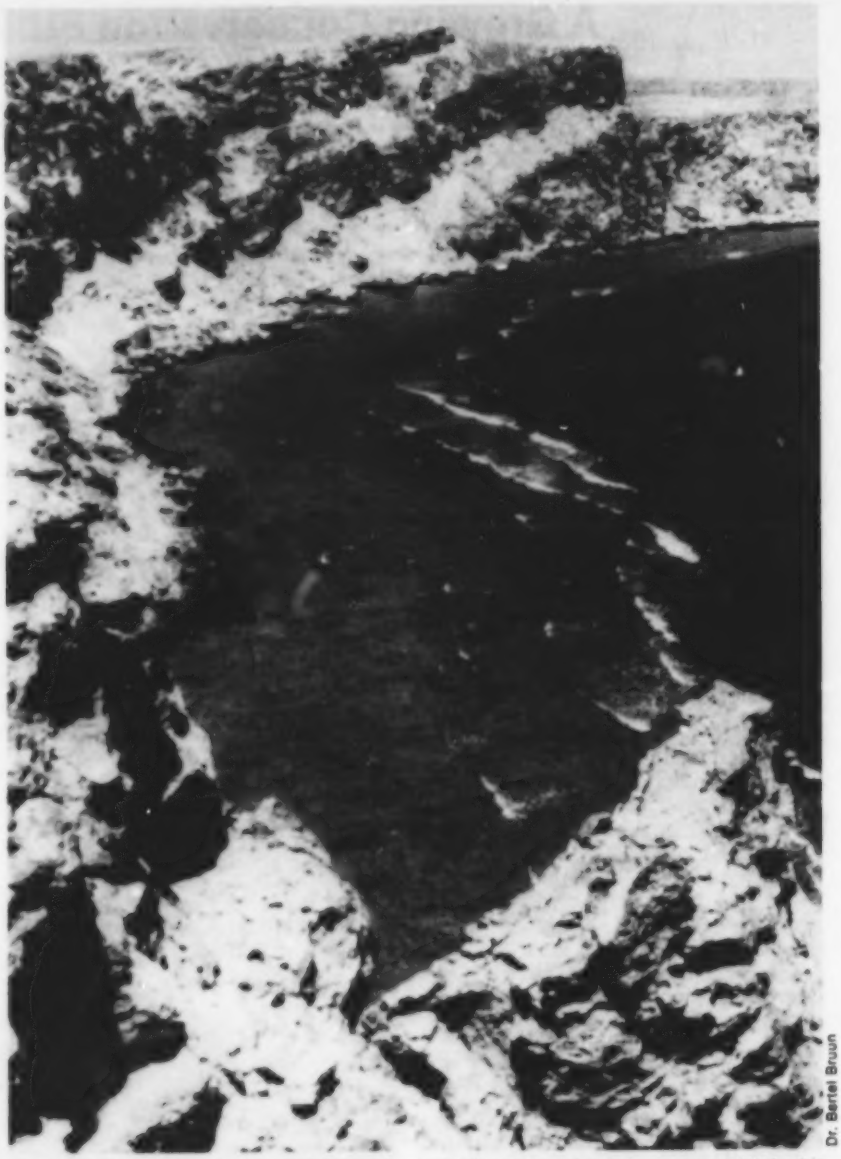
These drawings were made from a photograph of hieroglyphics in the tomb of Unis (circ. 2360 B.C.) in Sakkara, Egypt. The abundance of owls, falcons, and herons illustrates the high value ancient Egyptians placed on wildlife.

David A. Ferguson

The human demand for natural resources must be balanced with conservation efforts in developing countries such as India.

The HLCF: Fostering a Conservation Ethic

Bertel Bruun, M.D.
Director
Holy Land Conservation Fund
New York, New York



Dr. Bertel Bruun

View of the shoreline at Ras Mohammed, one of the first protected areas established in Egypt.

We arrived two days late in Cairo. The famous bird artist Arthur Singer and I were on an initial fact-finding trip through several Middle East countries for the Holy Land Conservation Fund (HLCF) in 1978. The turmoil in Teheran had held us up when we were there. This was the beginning of a close and continuing cooperation between the Office of International Affairs of the U.S. Fish and Wildlife Service and the HLCF.

The HLCF is a non-government, nonprofit foundation dedicated to conservation of nature and wildlife in the Middle East. Almost effortlessly and without a predetermined design, a trilateral team including representatives of the Service's Office of International Affairs, the Science Attache of the U.S. Embassy in Cairo, and the HLCF was formed.

Our goal was the same: promoting nature conservation in Egypt, a concept almost nonexistent in that country at the time. We came from different backgrounds, and with different resources at our disposal, but our aim bound us together.

In subsequent years, we doggedly pursued this goal individually and together. Although financially independent, we soon realized we supplemented each other in a way that allowed interested Egyptian parties to rely on our assistance in a greater variety of projects. HLCF had relatively few resources, but those which were available were dispensed rapidly and efficiently. Its small size and independence made this possible, whereas the more cumbersome but infinitely wealthier machinery of the U.S. Government had less flexibility. For example, when the Egyptian Wildlife Service needed binoculars, the HLCF was able to supply them within weeks.

The political independence of the HLCF has also made it possible for us to pursue our goals in ways not open to a government agency. We were largely instrumental in helping the Ornithological Society of Egypt get started and were able to assist the Multinational Force and Observers in Sinai establish their own conservation effort.

In meetings with the highest echelon of the Egyptian government, with and without the presence of U.S. government representation, it was also possible to emphasize the importance of private industry (tourism) and the public awareness of environmental issues in other countries. This was especially important in the transitional period when Sinai reverted to Egyptian authority.

Meanwhile, the Service representative and the Science Attache were able to pursue the goals within their framework. Constant consultations occurred and several joint projects were undertaken. For example, studies of bird migration were conducted at Bardawil in North Sinai and at Suez. These studies served as training opportunities for Egyptian officials who were able to observe international wildlife experts in the field.

Dr. Bertel Bruun

Threatened by excessive hunting, the once common Nubian ibex is now protected in Southern Sinai.

Dr. Bertel Bruun

The Dorcas gazelle, an important game animal in the Sinai, is protected on St. Katherina and other wildlife reserves in Egypt.

As years went by with disappointments, half-successes, and successes—the cast of characters changed but the close cooperation continued. We maintained our initial concept that our goal could only, in the long run, be attained by Egyptians. We served as advisors and catalysts to an Egyptian understanding and effort.

Today, 8 years after we began our cooperative effort, Egypt is now receiving attention and—to a lesser degree—help from several international conservation groups. It has established protected areas at Bardawil, Santa Katherina, Ras Mohammed, Gabel Elba, and the petrified forest in the eastern desert. It has a functioning wildlife service, an environmental protection agency, modern legislation for the protection of biodiversity, and a small but growing public concern for conservation.

This might all have occurred without our participation, but I think the cooperation between government agencies and non-government organizations has proved not only feasible but highly effective. The sum is greater than the parts.

Dr. Bertel Bruun

This petrified log, located in a petrified forest about 10 miles East of Cairo, may date back 35 million years. The Egyptian Wildlife Service has recommended that this area be protected.

Service Supports Conservation Education on International Scale

Ed McCrea
International Affairs
Washington Office

The endangered species of India may seem like an unlikely topic for a Fish and Wildlife Service-sponsored television show, but sometime next year, such a program will debut on Indian television. The show is one of 24 half-hour programs produced by the Centre for Environment Education in Ahmedabad, India.

The series will focus on a variety of environmental issues as well as wildlife, and printed workbooks and lesson plans will enable the series to be used in thousands of schools throughout India. Although production and distribution will be done entirely within India, the Service has arranged for technical assistance and will provide matching funds in rupees from its surplus foreign currency account.

The television series in India is a more ambitious project than most Service education series abroad. However, it does share key attributes with our other foreign programs: a well-defined need articulated by the host government, the provision of short-term technical assistance with the goal of supporting and increasing local capabilities, and a significant financial contribution by the host government.

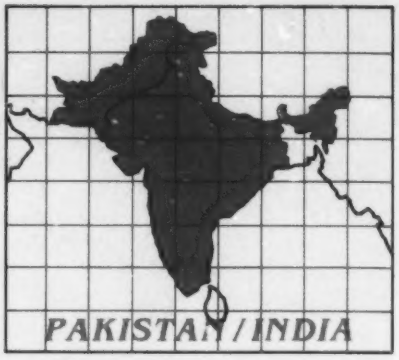
Fish and Wildlife Service participation in international conservation education is authorized under the Endangered Species Act. However, the actual impetus to conduct such programs stems from the realization in many developing countries that education can be a powerful tool in dealing with resource problems. Many such problems cannot be solved without the understanding and support of the people involved. When education is teamed with economic development that provides alternatives to overgrazing and depletion of fuel wood, it is possible to attack basic issues which threaten wildlife and habitat successfully.

A key to the success of the Service's program has been our ability to match incoming requests with individuals and organizations that can provide the technical assistance required. That is not always as easy as it seems. In addition to high technical competence, flexibility, and an ability to work within a new cultural context are also needed. So far, the Service has used experts from a wide variety of sources inside and outside the government.

The India television program previously mentioned is being coordinated by a professor of communications from the State University of New York. Additional work in India has been carried out by Tom Bell from Squaw Creek National Wildlife Refuge, Carol Lively from the Region 6 regional office, and Pat Martinkovic from the Twin Cities regional office. Martinkovic also assisted with a project in the Canary Islands.

Employees from the National Wildlife Federation helped with projects in Egypt and Turkey, and the University of Missouri was involved in work in the Caribbean. The Holy Land Conservation Fund is carrying out activities in the Near East, and the Tennessee Valley Authority is coordinating a series of workshops in Pakistan.

In all cases, the education has been a two-way process. Learning to deal with language and cultural differences has contributed to more effective communication here at home. In the final analysis, Fish and Wildlife Service international education efforts are benefiting wildlife resources on a truly global basis.



Technical Assistance in India

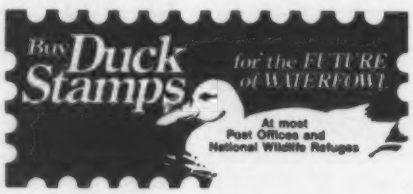
Roger Johnson
San Francisco Bay NWR
Newark, California

Today, my recollections of a brief visit to Bombay, Rajkot, and Mithapur, India, in 1983 are both somewhat diminished with time, yet startlingly vivid. The names of people and places have faded, but their persistent influence on my new understanding of the term "ecology" remains strong and permanent.

My official assignment was to consult with the directors of World Wildlife—India and management of the Tata Chemical Company saltworks. The proposal I was to examine was the establishment of an "overlay" bird sanctuary on the active and expanding saltworks operated by the chemical company. This would be an operation very similar to that of the San Francisco Bay National Wildlife Refuge which I manage.

The geographic locale was the Okha Rann that encompasses approximately 18,000 acres of a natural flat off the Gulf of Kutch in the State of Gujerat. The area has been sectioned off with a series of dikes and converted to "salt pans" by the chemical company.

Upon arrival, it soon became apparent that there were other items that had been added to my list. My hosts outlined an agenda that included an assessment of the restoration and development of the resources of Okhamandal Taluka, roughly equiva-



lent to the local county. This was to include a look at forest and grassland management, livestock population dynamics and local husbandry practices, energy development, air and water pollution, resource protection, marine sanctuaries, soil depletion, and other natural resource issues related to cultural practices.

Efforts to expose me to these and other facets of Indian culture brought me in contact with a diverse collection of people. They included nomadic herdsmen and village leaders, both competing for forage grasses; marine biologists and coastal police looking for smugglers on the Gulf of Kutch; and priests at the Dwarka Temple. There were beggars and Rolls Royces in the streets, and valient environmentalists and determined industrialists were in evidence.

I listened a lot. And the more I heard and saw, the more apparent the complexity of my hosts' expectations became.

In essence, I was being asked to produce a comprehensive document outlining the steps to accomplish a plan for compatible eco-development of Okhamandal.

In light of this, I reflected on the advice offered by a colleague shortly before my departure. "Just go show 'em how to run a refuge!" Now, thousands of miles away from the U.S., I knew I was in over my head.

However, there was one common thread holding the fabric of this challenge together—for every problem raised there appeared to be one or more solutions at hand, ready to be put in motion. Solutions waiting, as it were, for someone's benediction. But all of the cures, whether it was enhancement of flamingo nesting on the salt pan or restoration of a village wood lot, required someone to be the first to give up something. It was just like home, but on the other side of the world.

In the end, I had no ponderous or profound answers to offer and honestly felt none were needed. The locals had their own very good and workable solutions. My "document," inadequate as it was, simply attempted to reflect and support the wise and thoughtful proposals already in evidence.

On my last day in Bombay, the World Wildlife Fund arranged a press conference. Representatives from 11 newspapers attended. I was also interviewed for 15 minutes on Air India, the government radio station, concerning my recommendations for the restoration of polluted Bombay Harbor. But my most stressful, and baffling, experience in India still lie ahead.

Three young girls in school uniforms stopped me as a I passed their academy. They asked me if I would teach them how to smoke a pipe. Apparently they had watched me for 3 days as I went back and forth to the U.S. Consulate.

I began my response with a paraphrase of the Surgeon General's warning, continued with the threat of cancer, and summed it up with observations concerning my 30-odd wasted years of smoking. Their response was blank looks and giggles.

They explained that their school play called for casting one of them as an old, grumpy, pipe-smoking, English schoolmaster—and they thought I was an excellent example.

Through it all—the sheperds, taxi drivers, industrialists, politicians, environmentalists, and, finally the school girls, I surmised people are pretty much the same worldwide.

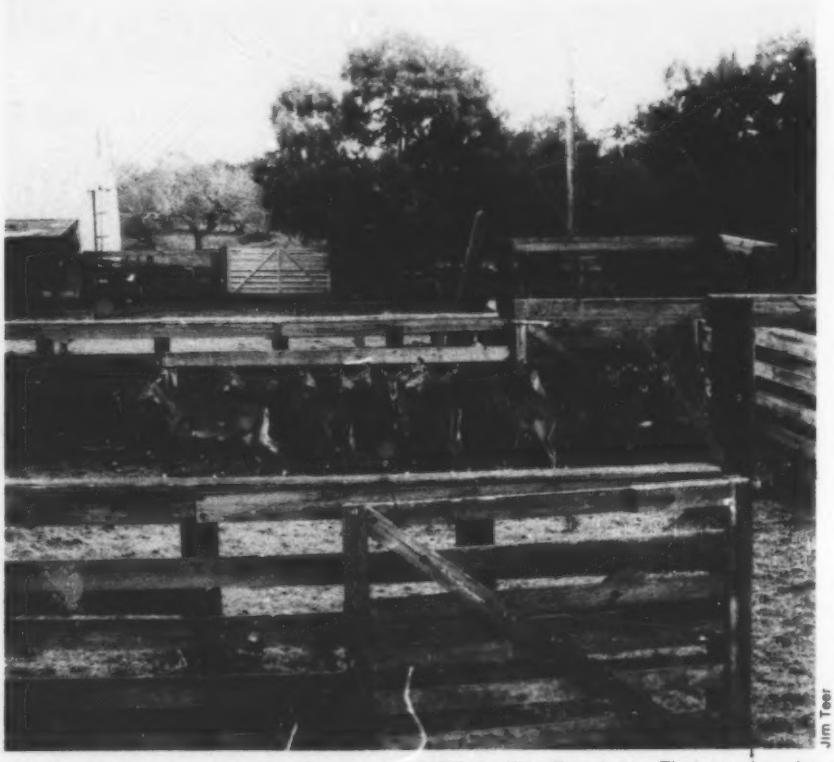
To Feed a Hungry World

Jim Teer
Welder Wildlife Foundation
Sinton, Texas

In the mid-1960's, while employed by Texas A&M University, I became acquainted with international conservation through a research program in Africa funded by a foundation of King Ranch, Inc. I was interested in the ecology and management of large mammals and had experience in research and management of big game in Texas.

The project's objective was to evaluate wildlife as a food source for a hungry world, and whether Africa's great, but underutilized, herds of plains game had the potential for providing cheap protein for malnourished Africans. Game viewing is the primary attraction to tourists in Africa. Wildlife in developing countries must compete in the market place with other forms of land use.

If it loses, its habitat will be given



Jim Teer

Nilgai antelope were stocked in Texas in the 1920's by King Ranch, Inc. Their numbers increased to over 6,000 by 1986. Studies of the species in India have provided important information on their ecology and management.

over to conventional row-crop and animal agriculture. This was the beginning of a conservation strategy that is finding even greater support today in developing nations.

We began by associating several of our faculty members and students with the National Park System of Tanzania, the East African Agriculture and Forestry Research Organization in Kenya, and the Mammal Research Institute at the University of Pretoria in South Africa. Projects ranged from studies of the ecology of Burchell's zebra, Thompson's gazelle, and the African buffalo on the great Serengeti National Park to evaluating the potential of several species of antelope and zebra to provide meat for indigenous peoples. To protect the future of wildlife and to provide much-needed food, we conducted research and trained African scientists for about 10 years as part of this project.

With support from the Smithsonian Institution, I made my first visit to India in 1972. The purpose was to develop a research project on several species of large mammals that had previously been introduced into Texas. Blackbuck antelope, nilgai antelope, and chital or axis deer were objects of great interest because some had escaped from ranches or were released and became established in free-ranging populations.

We needed to learn something about their ecological requirements so that we might understand their impacts on native biota and to manage, and perhaps control, their numbers.

While in India I met an important Indian scientist/educator who contributed philosophically to my interest in global conservation. The late Dr. B. R. Seshachar, then president of the Indian National Academy of Sciences, was interested in environmental and conservation affairs. When I knew him, he was the principal Indian scientist and administrator of studies being conducted on the Asian lion and various species of ungulates in the Gir Forest.

Indian conservation was struggling to protect and regain some of the health of its environment which had been ravaged by neglect and a burgeoning population. Dr. Seshachar described the great cities of India in the 19th and 20th centuries, comparing them favorably in beauty, design, and wealth with Paris and other cities of the Western world. He described beautiful tree-lined boulevards, parks, residential areas, and public buildings in Calcutta, Hyderabad, Bangalore, Bombay, and Delhi. What we in the western world want our cities to be.

Now they are blighted, and the rich, diverse fauna and natural environments in India have been decimated by the pressure of human numbers.

Seshachar warned that the Western world was in danger of a similar fate, and that although we may be culturally different, we are not isolated from the rest of the world. Tremendous populations of humans throughout the world would ultimately overwhelm the health and natural resources of the West, not by force of arms or aggresion, but simply by the explosion of humankind and their over-exploitation of natural resources.

The Office of International Affairs of the U.S. Fish and Wildlife Service has sponsored several assignments in India with PL 480 funds. My most recent overseas assignments in India were in 1982 at Kahna National Park where I participated in teaching techniques of wildlife management to foresters and other conservationists, and in 1986 at Aligahr Muslim University at a symposium on "The Role of Universities in Wildlife Education and Research."

Since then I have continued my interests in African and Indian conservation affairs and have also worked in Central and South America on various conservation issues and projects.

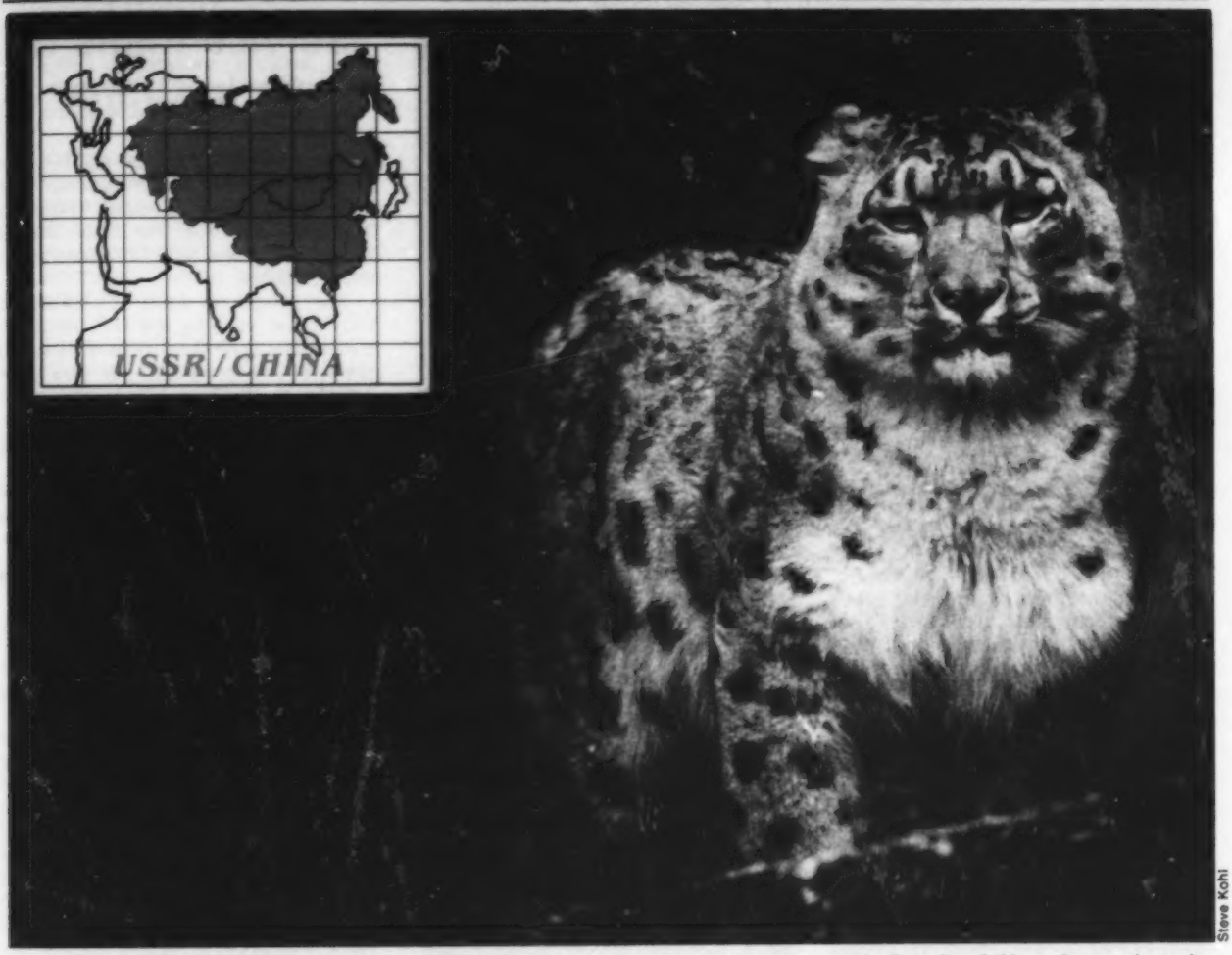
The opportunity to work abroad in developing nations has been rewarding both professionally and personally. My international perspective on conservation and its role in human affairs reinforces my belief that conservation is a global matter. It cannot be a parochial separation of our own culture and heritage from that of others. As in ecological didactics, protection and wise use of natural resources and the environment cannot be isolated geographically, ecologically, or socially.

We live on one planet, the fragility of which has been demonstrated time and again by the influences and impacts of man's activities. The enormous growth of our own numbers, the global seep of pollutants and toxic wastes, the destruction of vast areas of habitat best left intact for their own intrinsic worth, and the loss of genetic material—often through commercial exploitation of scarce animals and plants—are the most obvious and serious examples of how we and our land masses are hinged together. Our linkages are not unlike the food webs and tensile interactions of life forms which make up our world.

Any biologist with interests in science and conservation can hardly ignore the kinship between peoples, animals, and places on a world-wide scale. The evolutionary ties between all classes of vertebrates and the similarities in problems facing cultures and societies with which they exist are plain to anyone who cares to look for them.

Jim Teer

The author, James Teer, during the cropping of elephants in Tanzania in the mid-1970's. The Government of Tanzania issued permits to reduce elephant numbers in the Mkomazi Region where elephants were concentrated and were destroying their habitat.



Steve Kohl

It is hoped a 1985 US-USSR exchange of captive-bred snow leopards will enhance the genetic diversity of this endangered species.

Superpowers Cooperate in Wildlife Conservation

Steve Kohl · International Affairs · Washington Office

On a remote, foggy Aleutian island, in Alaska, three Americans board a Soviet research vessel to conduct a month-long joint survey of walrus in the North Pacific Ocean. Meanwhile, half a world away in the steppes of the southwestern USSR, Soviet and American biologists place eggs of the endangered Siberian crane into the nests of common cranes for hatching and rearing by surrogate parents.

These and other conservation activities are being co-sponsored by the Service and its Soviet counterpart agencies under a bilateral US-USSR environmental agreement, signed during the first SALT summit of 1972. Since then more than 500 scientists from both countries have taken part in laboratory research, field studies, and numerous conferences and symposia.

Among the highlights:

- A US-USSR Convertion Concerning the Conservation of Migratory Birds and Their Ervironments was negotiated and ratified by the two countries.
- Extensive joint aerial and shipboard surveys of marine mammals in the Bering and Chukchi Seas have enabled the population status and migratory patterns of several species of whales, dolphins, walrus, and seals to be determined.
- Annual botanical expeditions in both countries to collect and catalog rare plants have produced a complete floral inventory of the two countries, bringing to light many similar or identical species.
- A major cooperative effort to enhance the genetic diversity of captive-bred animals in U.S. and Soviet zoos has resulted in exchanges of Przewalski's horses, Siberian tigers, snow leopards, and other endangered species.
- Research on fish physiology, diseases, nutrition, and genetics has been carried out in laboratories in both countries, and fish cultures, cell lines, eggs, and fingerlings exchanged.
- Two large-scale oceanographic expeditions in the Bering Sea permitted American and Soviet scientists to compile a comprehensive ecological profile of this little-studied area.

Steve Kohl

The endangered Siberian crane has been a cornerstone of US-USSR captive breeding efforts since 1975.

Representatives of the two sides meet annually to review the past year's accomplishments and plan future activities. Proposals are evaluated on their scientific merit, potential usefulness to both countries, and feasibility of implementation (i.e., are there restrictions in either country which would hinder the progress of the work?).

Once an agenda is agreed upon, the Service's Office of International Affairs undertakes arrangements for both the travel of American participants to the USSR and visits of their Soviet colleagues to the United States.

Of course, the fundamental ideological and bureaucratic differences between the two countries sometimes create a variety of difficulties requiring creative solutions.

For example, an agreement may be reached to publish the results of joint research simultaneously in English and Russian, but delays are encountered on one side or the other. This naturally causes concern that the findings will be out of date by the time they get into print. Misunderstandings have arisen over the processing of travel documents, last-minute itinerary changes, and unexplained postponement or cancellation of activities.

Despite such obstacles, American and Soviet scientists have succeeded in establishing professional affiliations which have generated a high degree of bilateral goodwill. Occupying nearly one-fourth of the earth's land area between them, the U.S. and USSR have a great deal of common ground on which to base their cooperation.

Service Films to Air in China

Central China Television (CCTV) has selected two Service programs, "*The Role of Research*" and "*Wildlife, Wetlands and You: the Duck Stamp Story*" for a one time broadcast over their network.

The programs were submitted to CCTV last year by the U.S. Information Agency as part of a project to provide free programs for one time broadcast in China. The goal is to open new avenues of communication between the People's Republic of China and the United States.

Both Service programs should be aired in China within the next few months.

Service Establishes Ties with China

Steve Kohl
International Affairs
Washington Office

When the United States and People's Republic of China (P.R.C.) ended their 30-year estrangement by establishing diplomatic relations in 1979, they also took steps to renew the two-way flow of information and ideas in a number of fields.

One result was a bilateral agreement, *Cooperation in Science and Technology*, which has come to serve as an umbrella for the more than 25 protocols signed between U.S. Government agencies and their Chinese counterparts.

Containing one-fourth of the world's population in an area only slightly larger than that of the U.S., China represents a unique opportunity to study the relationship between human demands on limited resources and the need to protect wildlife and enhance the natural environment. As early as 1981, the Service was in touch with its closest P.R.C. counterpart, the Ministry of Forestry, to explore options for joint activities which might eventually lead to the signing of a formal protocol.

In the ensuing years the two agencies have maintained a dialogue, and the Service eventually became acquainted with other sister agencies in China, including the Ministry of Agriculture, Animal Husbandry and Fisheries; the Ministry for Urban Construction and Environmental Protection; and the Academy of Science's Institutes of Zoology and Botany. (The latter conducts much of the P.R.C.'s wildlife research.)

After several informal exchanges of correspondence and exploratory delegations, the two sides agreed to negotiate a protocol, and in June 1986 two Service representatives and one from the National Park Service traveled to Beijing to work out mutually acceptable wording. The resulting document is to be signed early this fall in Washington, D.C. by Interior Department Undersecretary Ann McLaughlin and P.R.C. Forestry Vice Minister Liu Guangyun.

The two countries are now preparing to move forward with exchanges under eight broadly-defined categories:

1. *Protected Natural Areas:* refuges, parks, and biosphere reserves.
2. *Rare and Endangered Animals:* research, field surveys, captive breeding, and implementation of the Convention on International Trade in Endangered Species (CITES).
3. *Migratory Birds:* banding, recovery, record-keeping, and a possible bilateral protective convention.
4. *Fish Husbandry and Marine Mammals:* aquaculture, nutrition and disease research, anadromous species, and marine mammal surveys.

5. *Botanical Research:* plant taxonomy, laboratory studies, and field collection expeditions for propagation in herbaria.

6. *Cooperation among Zoos in Captive Animal Research and Maintenance:* facilities design, collections acquisition and management, veterinary practices, and animal exchanges for genetic enhancement.

7. *Ecosystems Studies:* wetlands, deserts, alpine, subalpine, permafrost, and subtropical areas.

8. *Adaptation of Technological Advances for Practical Use in Nature Conservation:* radiotelemetry, possible applicability of the Service's Geographic Information System, Instream Flow, and Habitat Evaluation activities.

To carry out these projects, the Service plans to work together with other U.S. Government agencies, private organizations, and academic institutions. Additional information about the P.R.C. program will appear in future issues of the *Fish and Wildlife News.*

China: A Personal Perspective

H. George Ketola
Tunison Laboratory of Fish Nutrition
Cortland, New York

I spent 20 days in China at the invitation of the Chinese Society of Fisheries to teach fish nutrition and research. "Along the way," I visited three universities and seven fisheries institutions in Beijing (Peking), Qingdai, Shanghai, and Guangzhou (Canton). Beijing compares to Philadelphia in latitude, and Guangzhou is subtropical, as shown by its hot, humid weather and banana trees.

During my visits and teaching in China, I found a great need for, and interest in, fish nutrition and research information. All the scientists and fisheries administrators are very anxious to learn from us, and desire to exchange information and find ways to improve their fish culture.

Their facilities, equipment, and expertise ranged from minimal to modestly well-suited. Their technical information base in the nutrition field is obviously limited, but they have developed remarkably impressive ways to pond-culture carp.

Everywhere I visited, the scientists and administrators expressed a strong desire to develop friendships and to collaborate with American scientists.

I found my Chinese hosts very thoughtful, kind, and generous. They tried to anticipate all my needs for living and comfort. Although I had a busy schedule, I had opportunities to sight-see and tour various areas. Interpreters were always available and they were willing to freely answer my questions about their country.

Few Chinese speak English well, but young people study English in the public schools and many continue to study it after graduation. They consider English an international language and a means of promoting technical and economic development in China. Although sometimes reserved, they seemed to enjoy a chance to practice speaking English.

I was confronted directly with the fact that China is a country of tremendous global impact. Its 1 billion population represents about a quarter of the earth's population, and it has only about 1/15th of the earth's tillable land. The People's Republic of China was established in 1949 under the leadership of Mao Tse-tung and began collective agriculture in 1953. From 1959 to 1961, China experienced a severe famine. Recent estimates by *Scientific American* suggest that over 30 million people may have died from starvation.

After Mao's death, Deng Xiao-Ping led China to end its isolationist policies and invited outside assistance to stimulate modernization in the areas of agriculture, industry, defense, science, and technology. Modernization is evident in cities by construction of new luxury hotels, large stores for tourists' shopping, and newly-widened streets with separate lanes for automobiles and bicycles. Bicycles are still far more numerous than automobiles. New roads and bridges are being built in rural areas.

Food shortages, the great population, and limited tillable land make fishing and aquaculture (fish farming) of tremendous importance. Currently, the food supply in China is generally sufficient for most of the population with scarcities in some rural areas. The average consumption of animal products, fats, and oils is only about 20 percent of that in America, while intake of starchy foods (cereals, tubers and legumes) is 275 percent greater. That of fruits and vegetables is only a little higher (15 percent). Sugar consumption is almost nil in China.

The average yearly intake of fish products in China is about 13 pounds per person, which is close to the intake of fish in the U.S. Fish is China's second most important source of animal protein, with pork being number one.

Aquaculture products represented about one-third the amount of products captured by fishing in 1957, and about two-thirds in 1984. Industry leaders in China have set a goal of 9 million tons by 1990 through increases in fishing and fish culture. It is expected that this increased production will increase the annual per capita fish consumption from 13 to 17 pounds by 1990.

Fish culture dates back at least 2,400 years in China, when the first treatise on common carp culture was written. During the Teng Dynasty (618-907 AD), the catching and eating of common carp was prohibited because its pronunciation was the same as the name of the emperor. At that time, polyculture began with the rearing of grass, big head, black, and silver carp together.

Today, all these carp are very important aquaculture species, while new species of food fishes are also being cultured. They include Chinese bream, clarid catfish, snakehead, Wuchang fish, mandarin fish, mud carp, and others. Common carp can be hormonally induced to spawn all year round, while most other species spawn only once a year.

The Chinese have developed elaborate concrete tanks for spawning, hatching, and rearing fry. Large earthen ponds are used for growing the fingerling carp to market size.

There is also a culture practice in which several species are reared from egg through early life stages and then released to marine water to continue growing to a commercially fishable size while feeding on natural food. This is practiced for their large (8-10") prawn (*Penaeus aurata*), abalone, sea cucumber, black sea bream, and left-eyed flounder.

Oysters, scallops, clams, and seaweed are also cultured and managed in coastal waters. Further, there is strong interest in culturing fish such as tilapia, the freshwater Japanese prawn (*Macrobrachium rosenbergi*), and other species that may serve as export products.

Cooperative Research Units—An International Partnership

Reid Goforth
Cooperative Research Units
Washington Office

The U.S. Fish and Wildlife Service is recognized worldwide for the expertise of its scientists in wildlife and fisheries research. The same is also true for those at many universities in the United States. The Cooperative Research Units help form a partnership between the Service and these universities, and become involved in research of international scope and interest.

Several Service scientists in this program are recognized world leaders in their particular areas of research and are regularly called upon for involvement in international research and information dessimination activities. The extreme northern location of the Alaska Wildlife Unit and the expertise of its leader, Dr. David Klein, recognized worldwide for his knowledge of Northern ecosystems, cause this unit to be involved in circumpolar wildlife research in northern latitudes. The Porcupine caribou herd that migrates between northwestern Alaska and the adjacent Yukon and Northwest Territories of Canada has been a focus of Alaska Unit research and graduate training for several years. Results of this research have been used by the U.S. Fish and Wildlife Service and the Canadian Wildlife Service to evaluate potential drilling, mining and other development activities in many northern areas.

The Alaska Unit also maintains an active student exchange program with the Scandinavian countries, as well as a research program on the ecology of northern mammals and the influence of development activities on wildlife and their habitat. Students from Finland, Norway, Sweden, and Denmark have pursued advanced degrees through the Alaska Unit. Dr. Klein has served in a consulting capacity to the Norwegian, Danish, Icelandic and Greenlandic governments on questions concerning the impact of northern development on wildlife resources.

The Montana Wildlife Research Unit entered the international wildlife scene several years ago when Dr. Bart O'Gara began advising Peace Corps volunteers in methods for studying wildlife species in Asia, Africa, and South America. Three of these volunteers became unit students and returned to Malaysia and Nepal to do their research studies there. In 1984, unit leader O'Gara was invited to go to Pakistan to identify research and training needs in wildlife management. Recommendations from that assignment led to development of a study plan for high priority research projects. Two graduate student biologists from the unit are currently working in Sind, Pakistan, on the ecology of Sind ibex and urial in Kirthar National Park. Dr. O'Gara is also active in developing training programs for personnel of the Pakistan Forest Institute and field biologists in the provinces.

Migratory bird research at the Wisconsin Wildlife Unit takes its personnel to Canada and Mexico as well as into South America to conduct cooperative international studies. Of the ducks that breed in North America, blue winged teal migrate the longest distances and winter further south than any others. These

Sanat Dhungel

Researchers found elephants to be the ideal "all terrain vehicles" for studying hog deer in the Terai of Nepal.

Tirtha M. Maskey

The gharial, an endangered species of crocodile found in Nepal, may benefit from the Florida Cooperative Fish and Wildlife Research Unit's studies on the American alligator.

birds winter in Central and South America.

Scientists and students of the Wisconsin unit are conducting research in Columbia, South America, to determine the energy needs of these teal for their long journeys and how these facts might relate to the condition of the birds that breed in the northern U.S. and Canada.

The Wisconsin unit is also doing research on the reproductive success of Canada geese, their distribution and rates of harvest in order to determine better ways to manage this international resource. The Provincial Government of Manitoba and the Canadian Wildlife Service are also cooperating in this study.

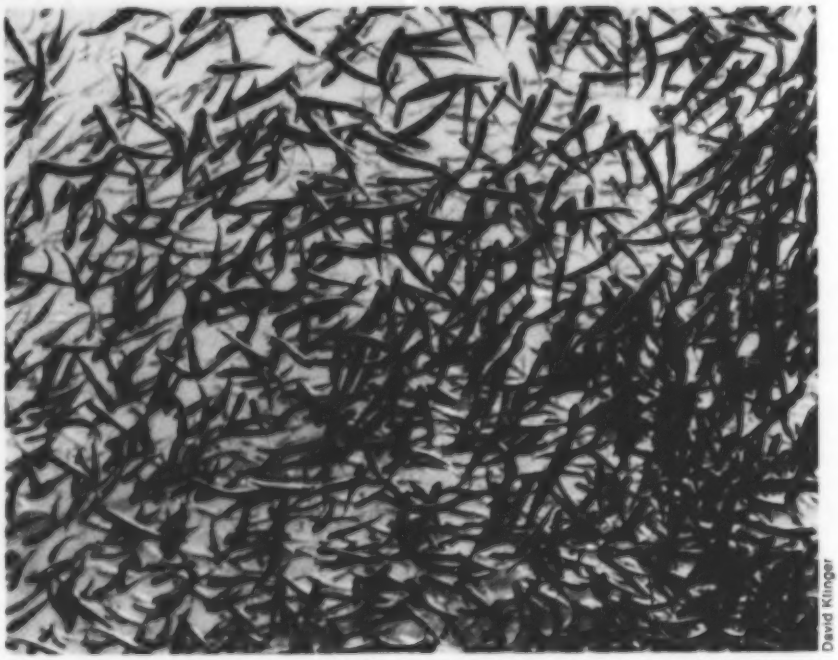
Most of the State of Florida is subtropical and this fact makes much of the research of the Florida Cooperative Fish and Wildlife Unit applicable to situations beyond the U.S. border. The Unit is doing research on West Indian manatee, sea turtles, and the Everglades snail kite, all of whose ranges include more southern countries.

The Florida unit's participation in research on the biology and harvest potential for the American alligator has attracted a student from Nepal who is studying potential captive-rearing and restocking methods to be used to help the gharial, an endangered species of crocodile in Nepal.

Bart O'Gara

Shown above is one of 95 hog deer captured in tangle nets as part of a recent study in Nepal.

Fishery Resource Management—An International Challenge



David Klinger

With good habitat quality, scientifically based management, and controlled harvests, these young salmon will fulfill their biological potential, provide many beneficial uses to man, and continue to perpetuate their species.

Joe Kutkuhn
Fishery Resources
Washington Office

A common phrase heard among fishery resource managers is that "fish know no boundaries," referring to the dilemma of managing highly migratory fish stocks that cross international boundaries and are subject to a melange of geopolitical jurisdictions and regulations.

Fishery agencies have long recognized the many factors contributing to the declines in fish populations such as habitat destruction, dams, and overfishing. However, they also realize that their individual efforts at solving these problems and rebuilding stocks will be fruitless unless international fishery interceptions are cooperatively controlled.

It is impossible to manage migratory stocks in an institutional vacuum and still expect to attain conservation and restoration goals. As a result, cooperative international fishery management authorities have been created in response to these management challenges.

Cooperative fishery resource management is the conceptual cornerstone of many existing international fishery resource management councils and commissions, such as the Great Lakes Fishery Commission, the North Atlantic Salmon Conservation Organization, and the Pacific Salmon Commission. Although each organization works within a different political, geographical, and biological framework, they are bonded, in principle, by common fishery resource management objectives that have remained unchanged during the three decades since their establishment.

These objectives include: prevention of overfishing; provision of optimum production through either natural and/or artificial means; coordination and integration of research; and provision for equitable sharing of the fish harvests among producing countries. These organizations provide the official forum for international coordination and management for some of North America's most historically significant fishery resources; lake trout and Atlantic and Pacific salmon. Since the Service has no direct regulatory authority in these organizations, such as a voting commissioner's role, how then do we effectively participate?

Most observers would immediately recognize the contribution of the National Fish Hatchery System toward the restoration goals of these commissions. However, this is but one leg of a triad of fishery science disciplines in which the Service contributes research, culture, and management.

Relative to management functions, Service fishery assistance personnel are members of the chinook, coho, chum, and sockeye technical committees of the Pacific Salmon Commission. These committees are responsible for evaluating data on harvest, population size, and terminal area escapements used in making recommendations on harvest ceilings to the Northern, Southern, and Fraser River panels.

Similarly, fishery assistance biologists are actively involved in Atlantic salmon restoration. In Great Lakes Fishery Commission committees, the Service, through its Great Lakes Fishery Laboratory, Regional, and sea lamprey management personnel, is a major contributor to the development and analysis of data used in directing individual lake fishery management plans.

Service research contributions to international fishery resource management are well exemplified in efforts of the Great Lakes Fishery Laboratory. This lab has been a leader in the biological, chemical, and physical research of fish populations and their habitats in the Great Lakes.

Research into Pacific and Atlantic salmon diseases, culture, management techniques, and genetics at the Seattle National Fishery Research Center and the National Fisheries Center in Leetown also contributes to increasing the scientific capabilities of international fisheries management. As an example, the Seattle laboratory has worked with techniques to genetically identify and mark stocks of salmon. This is an extremely valuable tool in identifying the specific stocks harvested in mixed stock ocean fisheries.

In addition to the technical management and research functions, the Service participates at advisory levels in the North Atlantic Salmon Conservation Organization's Northeast and North American Commissions; Pacific Salmon Commission's Southern Council; and the Great Lakes Fishery Commission's Committee of the Whole. These advisory groups assist in policy development and in providing guidance to the commissions.

The Great Lakes Fishery Laboratory research vessel Kaho trawls for forage fish stock assessments in Lake Ontario. The resulting research data will provide the foundation on which fishery resource management decisions are based.

Lee Emery

An international resource, Pacific salmon and steelhead reared at Service hatcheries like the Hagerman National Fish Hatchery in Idaho contribute to sport, commercial, and Indian fisheries along the entire Pacific coast.

Coordination is critical for effective international fishery resource management. The biological and economical stakes are high, as evidenced by the Pacific salmon fisheries where United States commercial landings alone were nearly 726 million pounds valued at $440 million in 1985.

The Service is applying its expertise to effective management of these important fishery resources and is working cooperatively with other agencies toward this end. The collective strength of all concerned agencies working in unison creates an effective force in attaining both National and regional goals for the benefit of fishery resources and the people involved in their use.

Leetown Fisheries Center—

40 Years of International Education

George S. Gutsell
National Fisheries Center
Leetown, West Virginia

Although Leetown, West Virginia, may not be referenced in a world atlas or a directory of institutions of higher learning, in national and international fisheries circles, it could well be considered as the site of the "World College of Pisciculture."

Now designated as the National Fisheries Center, the U.S. Fish and Wildlife Service facility, located in historic Jefferson County in extreme eastern West Virginia, has trained or counseled fisheries professionals from practically every corner of the world.

Drawn by the Center's reputation for scientific excellence, hundreds of foreign nationals have vied for an opportunity to train or study at Leetown. They have come from every continent—from the arid plains of Egypt to the fertile farmlands of New Zealand; from the river valleys of India to the Scottish Highlands.

Leetown is particularly well known to fisheries personnel in Japan and the Philippines, who account for a large percentage of "Leetown graduates." The first foreign trainees at Leetown were Pascual A. Acosta and Manuel E. Medina from the Philippines, and Wagner T. Urquidi of Bolivia, who spent the summer of 1947 at the then "U.S. Fisheries Experimental Station."

Through the years since then and particularly with the initiation of formal courses by the former Eastern Fish Disease Laboratory at Leetown in 1957, foreign students have spent up to nine months studying fish health and culture. Among the many countries represented are Canada, France, Mexico, Norway, Nigeria, Spain, Portugal, Germany, and Venezuela. Leetown graduates have gone on to become fisheries leaders, not only in their native lands but also worldwide. Likewise, many of our Federal, State, private, and academic professionals have attained considerable career success, at least partially attributable to their Leetown training.

George S. Gutsell

The Fisheries Academy of the National Fisheries Center in Leetown, West Virginia, directs and coordinates training for the Service's national and international fisheries programs.

Leetown staff have also conducted training abroad. Academy superintendent Wendell S. Ogden once headed a "traveling" faculty that presented an electro-fishing course in Canada, and in 1981, Dr. H.L. Kincaid taught a 40-hour course on genetics/brood stock management to 14 students in Valparaiso, Chile.

H. Monte Stuckey

Donald G. Kuntzelman, former chief of the Service's fish cultural training at Leetown, inspects catfish with Awo Otisi, a fisheries trainee from Nigeria.

This fall, representatives from a number of North Atlantic nations will convene at the Fisheries Academy for instruction pertinent to U.S. health certification procedures.

Yet another international training program for the National Fisheries Center has been the fisheries training of Peace Corps volunteers who subsequently relayed this knowledge to various underdeveloped countries, primarily to alleviate serious food and economic problems.

In addition to formal training courses, a number of foreign fisheries workers have conducted research under the auspices of Leetown or under the tutelage of its scientists. Leetown researchers, likewise, have been detailed to several foreign countries to assist with special projects or problems.

Much of Leetown's involvement in domestic and international fisheries training can be traced back to 1941, when, under the direction of the late Dr. H.S. Davis, the Service's (then actually the U.S. Bureau of Fisheries) first in-service fish culture "school" was convened at Leetown. The class included several "fish car messengers" who were being retrained for assignments to "fixed" fish culture stations.

At that time, Leetown facilities included a dormitory, complete with a

cook/housekeeper, for students who were assessed 26 cents per meal. Spasmodic training was provided by Leetown during the 1940s and early 50s but the real thrust for fish health training programs should be credited to the late Dr. S.F. Snieszko, director of the Eastern Fish Disease Laboratory. His international reputation and collaboration with foreign scientists in various research projects attracted worldwide attention to Leetown. The Leetown research staff, which served as the "resident faculty", included Dr. G.L. Bullock and Dr. Ken Wolf, director and former director, respectively, of Leetown's National Fish Health Research Laboratory.

As 1986 marks 45 years of fisheries training at Leetown, all but five years involving foreign countries, the Service and the National Fisheries Center can look with pride at the contributions to international cooperation and mutual respect that have resulted from this small but dedicated effort.

H. Monte Stuckey

The late Dr. S.F. Snieszko pictured in a 1980 photo consulting with Lourdes A. Dureza of the Philippines who was then a fisheries trainee at Leetown. Dr. Snieszko was director of the Eastern Fish Disease Laboratory at Leetown and continued his fisheries research there after his retirement in 1972.

A Note of Thanks:

International activities coordinated by the Office of International Affairs often involve substantial contributions from other offices, branches, and field projects within the Service. It is support of this type upon which the success of an effort often lies.

Therefore, the Office of International Affairs would like to take this opportunity to offer thanks for this continuing support from all regional offices and virtually every Service element in the Washington Office.

In addition, we would like to recognize a number of individual centers, labs, and other field stations that have been instrumental in the Service's international activities.

Health Labs and Field Offices/Stations

Belle Chase Field Station

Columbia National Fisheries Research Lab, Missouri

Ecological Services Field Office, New York

Fish Farming Experimental Station, Arkansas

Leetown National Wildlife Health Lab, West Virginia

Ohio Field Station (Sandusky-DWRC), Colorado

Piedras Blancas Station (DWRC) California

Southeast Fish Cultural Lab, Alabama

Tunison Lab of Fish Nutrition, New York

Research Centers

Denver Wildlife Research Center, Colorado

National Ecology Center, Colorado

National Wetlands Center (NCET), Louisiana

Northern Prairie Research Center, North Dakota

Northwest Fishery Research Center, Washington

Patuxent Wildlife Research Center, Maryland

National Wildlife Refuges

Aransas
Bear River
Blackwater
Bombay Hook
Bosque del Apache
Brigantine
Buck Island
Cabeza Prieta
Caribbean Islands
Chincoteague
Desert Range
De Soto
Horicon
Imperial
J. Clark Salyer
J. N. "Ding" Darling
Kern
Klamath Basin
Kofa
Lacreek
Laguna Atascosa
Las Vegas
Lee Metcalf
Loxahatchee
Malheur
Mason Neck
Merritt Island
Mingo
Minnesota Valley
National Bison Range
Niobrara
Okefenokee
Patuxent
Piedmont
Prime Hook
Red Rock Lakes
Sabine
San Francisco Bay
Santa Ana
Sheldon Hart Mountain
Sherburne
St. Marks
Tule Lake

David A. Ferguson

Efforts are now being taken to assess the status of the endangered monitor lizard, which is taken for its skin in India and Pakistan.

cont. from p. 11

This is fortunate because project negotiations can take up to 2 years. The flexibility in their use can be helpful, as in the case of Egypt, where programs can be continued despite the unavailability of new funding.

Activities fall into three broad categories: research, including status surveys; education, including both public awareness and professional training; and resource management. India, Pakistan, and Egypt are all different in their flora and fauna as well as in their management methods, so the makeup and structure of each country program is developed accordingly while still adhering to an overall consistent approach.

International Affairs coordinates the programs in all three countries, but the activities take place in the individual countries using local personnel. U.S. and international expertise, in the form of technical information and personnel, is drawn upon from time to time as situations merit. Universities, non-government organizations, private foundations, State conservation departments, and Federal agencies other than the Service have willingly provided their expertise. Projects which could have direct benefits in the U.S. are among those sought out in the cooperating countries.

Project activities range from quick, low budget, high profile products to multi-year research studies that lead to long-term programs. We've assisted in the production of wildlife films and other audio-visual media as well as printed materials such as field guides and brochures in both English and the local languages. We have also sponsored workshops on endangered species, provided training for numerous personnel both locally and abroad and at several different levels (technical, orientation, and academic), and assisted in a number of multi-year ecological field research studies. Scientific material to augment numerous technical information and research libraries has also been supplied through our program.

During the course of these activities, we have been able not only to identify the doers and decision-makers in the wildlife movements in each country, but to encourage the spirit of cooperation and communication between local organizations. Once the realization emerged that we were vitally interested in helping and could work effectively with them, the response has been tremendous.

The wildlife movement in Egypt has gone from a handful of people who thought that wildlife conservation meant putting animals into an enclosure, to a full-scale nationally recognized and supported effort. Egypt has now established a wildlife service and a series of protected areas, joined international treaties and conventions, developed wildlife training in-country and abroad, and supported non-governmental organizations in support of wildlife conservation goals.

Pakistan has increased its participation in international wildlife agreements, has gained enhanced training for its wildlife personnel, and is developing a comprehensive environmental awareness program. Wildlife personnel in Pakistan have also increased their management skills for more effective maintenance of numerous species and are developing an increased wildlife research capability.

India is becoming a regional leader in all aspects of Asian wildlife research management and training. For a country that is one-third the size of the U.S. but contains four times our population, and for a country with incredibly diverse cultural and language disparities and faced with such monumental problems as overpopulation, volatile politics, food production, and pollution, it is incredible that wildlife should get any consideration at all, let alone a high priority. The Indian Government is committed to raising the country's status in the developing world, but not at the expense of its environment. Led by its prime minister, the wildlife conservation movement is given high priority throughout the country and is integrated in the country's current Five-Year Development Plan.

In this climate, the U.S. Fish and Wildlife Service has been able to assist India, as well as several non-government organizations, in a variety of ways. Perhaps most significantly, we are presently engaged in a major assistance program to help develop the Wildlife Institute of India. The Institute is the primary facility for training all Federal and State wildlife personnel in India. It is the center for wildlife research and is becoming a regional training center. As such, our assistance will have an impact on how wildlife research and management is conducted in India and south Asia for many years to come.

To summarize, our overall goal with the Special or Excess Foreign Currency Program is to help these foreign countries do their jobs better and hence fulfill our responsibilities under the Endangered Species Act.

IN THE NEXT ISSUE . . .

The next edition of Fish and Wildlife News will feature an interview with two Soviet aquaculture researchers concerning cooperative efforts with their counterparts in the United States. Their projects focus on development of standardized research methods to more accurately assess effects of contaminants on inland aquaculture efforts. This work is being conducted under provisions of the US-USSR environmental agreement signed in 1972.

MISSION BEYOND OUR BORDERS

cont. from p. 9

Cows have a heck of a lot of blood. It was splashing all over everything and everybody. It tended to affect your appetite.

Fortunately, the electric generator went out and everyone had to sit in the dark for an hour. By the time we got the lights back, the cow was gone, the floor hosed down, and we could eat.

FWN: How have these foreign experiences prepared you to fight the bureaucratic wars back here in Washington?

Mason: I have a feeling that if I got on the elevator out here on the second floor with members of the Directorate and a pesky live goat, I might be able to handle all of them better, based on my prior experience! The business is really fairly straightforward and the hard part is reaching that level where you're sure you're communicating effectively with your foreign counterparts—really communicating.

I recall distinctly visiting a laboratory in India with Dick Smith. India's work on migratory waterfowl had been taking place at Barathpur Sanctuary, and these young biologists were very interested in getting guidance from Dick on the credibility of their approach to the research they were doing.

They took us off to the lab. We went into the first room and there they turned on the light and showed their recordkeeping to Dick and the process by which they were collecting the information, and he confirmed that they were approaching the job the right way and gave them some suggestions as to how they might be able to better use the data as they were amassing it and interpreting it.

When they wished to take us to the next room, they unscrewed the light bulb and carried it into the next room and screwed it in and turned it on and we looked at the work they were doing there. And then on to the next room, by unscrewing the light bulb and taking it to the third room.

These guys were doing some pretty good research and Dick Smith was not unimpressed with it and he was able to give them some valuable guidance. But the reality was that they only had money for one damn light bulb! And the other reality was that we would have embarrassed them if we had given them 10 rupees and told them to go buy some light bulbs.

Let them continue at their own rate but continue to give them as many techniques and methods that you possibly can so that the scientific credibility of their work can be assured. The light bulb was unimportant.

FWN: In light of these overwhelming international problems, are you an optimist?

Mason: Today, I think I am. Tomorrow may be a different story. I only know about those places where the Fish and Wildlife Service is working directly. It took about 5 years of work in Egypt before we saw a genuine conservation effort developing within the government. We saw the establishment of an Egyptian Wildlife Service. We saw the establishment of protected areas and the placement of trained Egyptian Wildlife Service biologists into those areas to do inventories and to apply management.

We see in India and in Pakistan, alike, an infrastructure of wildlife and habitat protection that is pretty effective. And we see a corps of people with good scientific training that merely needs to be brought along through the best techniques and methods of research and management for wildlife.

In India, the energy that's being applied to the conservation effort is amazing. Conservation has been one of the very highest priorities of both Madam Ghandi and her son. To give you a reason to be optimistic, the number of trained people working effectively in the wildlife conservation movement in Latin America is growing, but not as fast as needed.

Some countries are in very bad shape, but throughout all of those areas, there's an increasing awareness and participation of nongovernment organizations that provide the conscience that makes the governments do a little better job. We may very well come to a conservation triage and concentrate our efforts on those areas where success is both biologically, culturally, and politically possible. Some experts have already written Africa off. I am not at that point yet.

FWN: How do you view the direction we are headed in the next decade or so? What international problems do you see?

Steve Stewart

The Service's Office of International Affairs is responsible for coordination and documentation of the Service's international activities. Here Mason and Jerry Touval select materials for use in an upcoming briefing session.

Mason: I think transboundary pollution is going to be a major issue for some time. Right now the focus is on air pollution. Earlier there were attempts to address transboundary water pollution problems in Europe, but the downstream countries on the Rhine couldn't get the upstream countries to admit they were polluting the water.

We do much better here with Canada through the International Joint Commission. Another major problem is going to be the maintenance of sufficient habitat to provide for a diversity of plant and animal species. "Biological diversity," I suppose, are the "buzz words" that are being used right now.

The pressure derives from the growing resource needs of the expanding populations in the Third World. Some of this may be confounded with continued efforts within the Third World or the "South," as it is often called, for greater sharing of the wealth between the developed world and the non-developed world.

But, we're in an era of significant growth throughout the world right now. Demands upon the resources have never been greater and those demands have consequent effects upon wildlife and wildlife habitats.

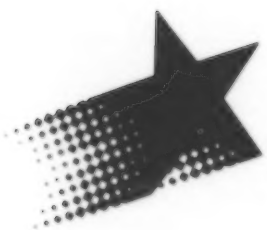
FWN: Do you think the international affairs mission is understood and appreciated throughout the Service?

Mason: I think there is a growing appreciation. We have established an international summary that we send out periodically to the Service Directorate, heads of laboratories, and key people that we're able to identify throughout the Service.

I think the reason for this special issue of the *Fish and Wildlife News* is to inform all our employees of the international work that's going on. One of the hardest things to do here, because of a number of administrative constraints—is to find all those people throughout the Service who have an interest or have an international experience in their background or have a language capability who might be available for a few weeks, for a short-term assignment in a foreign country.

You find a few people around and you ride those good horses to death. What I'm hoping is that the *Fish and Wildlife News* will reach those employees who do have interest and do have experiences and capability, so they can contact us.

—David Klinger
Current Information
Washington Office



Alaska PAO Wins "Blue Pencil" Award for Writing

Alaska Regional Public Affairs Officer George Sura recently received a "Blue Pencil" award from the National Association of Government Communicators for a feature news release he authored concerning Kodiak brown bears.

The nationwide contest is sponsored annually by the association, which looks for excellence in written and audio-visual materials produced by government employees for distrubition to the public.

Sura's release outlined the current status of brown bears on Kodiak Island and the potential threat posed by "DLP"—a situation under State law where a bear can be killed in "defense of life and property." The feature article, based on extensive interviews with State and Federal biologists, also provided a definitive summary of tips for getting along with bears and other pointers for hunters heading afield on Kodiak Island. The article was used widely by media in Alaska and the "lower 48."

Wallenstrom Named Pacific Regional Director

Rolf L. Wallenstrom has become the new Regional Director for the Fish and Wildlife Service's Pacific region, succeeding Richard Myshak, who resigned to enter private business.

Wallenstrom, 53, brings to his new position one of the most diverse backgrounds of any of the Service's senior managers, having served in the Washington office as both associate director for Federal assistance and deputy associate director for habitat resources. He will now supervise the six-State region, which presents him with some of the agency's most challenging resource management issues, including high-visibility endangered species listings and recovery issues, fishery restoration programs, and contaminant problems on national wildlife refuges.

"I will continue to emphasize professionalism among Fish and Wildlife Service employees," says Wallenstrom. "We have a lot of talent and we must continue to develop it to deal effectively with the complex natural resource issues we face."

Wallenstrom was one of the agency's first area managers, supervising all Service activities in South Dakota and Nebraska from 1972 to 1979. He joined the Service in 1959, and served as a senior appraiser in the Fergus Falls, Minnesota, wetlands protection program from 1961 to 1964. He supervised the Aberdeen, South Dakota, wetlands program from 1964 to 1970. Wallenstrom has also worked for the Diamond Match Corporation in Superior, Montana, and Crown Central Petroleum Corporation in Baltimore, Maryland.

He earned a B.S. in forestry from Syracuse University in 1955.

Rolf Wallenstrom

Teenager's Actions Net Award

Don Pfitzer
Public Affairs Officer
Region 4
Atlanta, Georgia

When Michael B. Sheppard of Homer, Georgia, saw a dead golden eagle in the road in November 1984, instead of walking away, he did something about it. Realizing that it was a Federally protected bird, he immediately reported it to the State game warden. Within four days, State wildlife officials and special agents from the U.S. Fish and Wildlife Service had apprehended the person responsible for the illegal killing.

For his role in providing information that led to the successful investigation of the incident, Sheppard, who is now 16, recently received a reward of $1,000 from the Service. Col. Steve Black, Chief Law Enforcement Officer, Georgia Game and Fish Division, presented the young man with an additional $100 on behalf of Turn In Poachers (TIP), a privately funded program.

During the presentation ceremony, the Service's Southeast Regional Director James W. Pulliam, Jr., called Sheppard's action an excellent example of Interior Secretary Don Hodel's *Take Pride in America* campaign. This effort encourages individuals to take an interest in protecting and conserving public lands and the Nation's wildlife resources. According to Pulliam, "Sheppard's willingness to become involved was a key factor in this case and exemplifies the basic philosophy and goals of the *Take Pride in America* effort."

The bird that was killed was one of eight golden eagles that were released in North Carolina to help restore the historic eagle population in the southern Appalachian highlands. The eagle was banded with both a leg band and a wing marker. A Tennessee Valley Authority biologist involved in the reintroduction effort estimated the minimum cost of rearing and successfully releasing an eagle to be about $3,800.

CORRECTION:

Terry W. McLaughlin, the Service employee who was recently named Engineer of the Year, works for the Denver Engineering Center, not the Denver Regional Office as reported in the last edition of *Fish and Wildlife News*.

photo courtesy Miller Brewing

Miller Brewing Supports Bald Eagle Restoration

Jerry Schmutte (left), group product director for Miller Brewing Company, presents a $50,000 check to Senator Howard Baker, chairman of the Save The Eagle Project (STEP), for bald eagle restoration in the U.S.

STEP, a non-profit conservation group, will give the check to the National Fish and Wildlife Foundation. In turn, that organization will work closely with the International Association of Fish and Wildlife Agencies to help finance bald eagle restoration projects in a number of states.

Kevin Schutt (center), president of STEP, holds Mr. Independence, a 6-year-old American bald eagle and a STEP mascot who lost part of a wing after suffering a gunshot wound.

The Service's Southeast Regional Director James W. Pulliam, Jr. presents Michael Sheppard with a certificate of appreciation and a check for $1000 for his role in reporting the illegal killing of a golden eagle in Georgia.

Please Note:

The Service's Office of Information Transfer recently moved. Their new address is: Office of Information Transfer, Fish and Wildlife Service, 1025 Pennock Place, Fort Collins, Colorado 80524. Its new telephone number is (FTS and commercial) 303-493-8401.

FISH AND WILDLIFE NEWS

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Take Pride On the Move

Fish and Wildlife Service field stations across the country have taken the lead in promoting the "Take Pride in America" public awareness campaign. Hands-on activities and outreach programs designed to alert citizens to their responsibilities as public land owners and to recruit support from all sectors of the community are taking place weekly from coast to coast.

To recognize this tremendous amount of public support for the campaign, Secretary Hodel has initiated a National Awards Program with 11 categories ranging from youth groups and business to media and the Federal Government. Nominations for awards poured into Washington and the winners will be announced early next year.

More than 50 nominations were carefully considered before the Service nominated its five most outstanding "Take Pride" activities to a "Blue Ribbon" panel of high-level officials for consideration in the Federal Government category.

Those special "Take Pride" contributions are: 1) The ongoing Minnesota Valley clean-up and awareness effort organized by the Minnesota Valley National Wildlife Refuge; 2) Kilauea Point National Wildlife Refuge for its overwhelming outreach efforts and volunteer activities; 3) Herb Reichelt of the Millen, Georgia, Fish Hatchery for his composition, donation and extensive marketing of the "Take Pride" theme song; 4) Research and Development for its active outreach for "Take Pride" when close public interaction is not a usual day-to-day activity; and 5) Region 5 for its incorporation of the "Take Pride" campaign into virtually every activity.

The Service is planning a new awards program for 1987 "Take Pride" awards will be presented for

cont. on p. 2

Joyce Hemenway

Shown are just a few of the over 120 volunteers who participated in a clean-up effort on the Little Red River in Arkansas. The activity, orchestrated by Greers Ferry National Fish Hatchery manager Steve Brimm, was a combined "Take Pride in America" and "Keep America Beautiful" event.

"Take Pride" Helps Arkansas River

Joyce Hemenway
Take Pride Coordinator
Washington Office

More than 120 volunteers contributed over 1,000 man-hours in September to a "Take Pride in America" clean-up of Arkansas' Little Red River. They helped restore a 25-mile segment below the Greers Ferry Lake Dam to its original pristine condition.

The clean-up effort, orchestrated by Steve Brimm, Greers Ferry Fish Hatchery manager, brought the Service together with affiliates of the "Keep America Beautiful" public service organization in the Greers Ferry Lake area. Keep America Beautiful has held an annual "Public Lands Clean-up Day" at Greers Ferry Lake for 17 years. In this first year of Service participation, Brimm extended the clean-up effort to include the Little Red River itself.

To this end, Brimm enlisted the aid of seven dock owners and organized a "clean up by boat" effort. The hatchery's 11 summer volunteers served as guides for 95 Arkansas College freshman, most of whom boated down the 25-mile stretch cleaning the river bottom with specially-designed snag poles supplied by the U.S. Army Corps of Engineers.

Forty boats and canoes, each carrying three or four volunteers, traversed four- to seven-mile segments of the river and collected 5 cubic yards of trash from the river bottom—an entire dump-truck full!

A dozen non-swimmers formed road crews to clean six public access points along the river while a local Boy Scout troop concentrated on collecting trash from around the docks.

The national Keep America Beautiful network can assist Service field stations with clean-up efforts in their areas. Information on how to initiate joint efforts in your region can be obtained from your regional "Take Pride in America" coordinators.

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cont. from p. 1

outstanding Service "Take Pride" activities. Regional coordinators will receive details on participation in the spring awards program this spring.

"Take Pride in America" promotional materials are nearing completion and will be available from your regional "Take Pride" Coordinator in the upcoming months. A generic "Take Pride" slide show will be released soon for use by regional offices. Generic posters touting the "Take Pride" theme are being made by the Interior, Agriculture, and Defense Departments and have appeared in city halls and out-of-the-way grocery stores. In the spring, the Service will begin a quarterly "Take Pride" update highlighting activities that can be emulated in other regions.

"Take Pride in America" activities have become a welcome means of support for many field stations. And although time and extensive amounts of energy are necessary to launch these new projects and continue old ones, we can expect returns on a geometric ratio for the fish, wildlife and their diverse habitat across America.

Posters Portray "Take Pride"

Steve Stewart

Service Director Frank Dunkle and Secretary of the Interior Don Hodel (right) are shown with several of the giant "Take Pride in America" posters done by sixth graders at the King Elementary School in Ann Arbor, Michigan.

Giant paintings depicting what "Take Pride in America" means to sixth graders at King Elementary School in Ann Arbor, Michigan were prominently displayed September 1 through 12 at the Washington headquarters of the Department of the Interior. The seven colorful eight-by-five foot posters depict the children's concept of public lands stewardship, and featured wildlife scenes, youngsters interacting with nature, and historical landmarks.

The murals were developed last school year as part of the King School's involvement with the National Fisheries Center-Great Lakes. Through the Adopt-A-School program, this U.S. Fish and Wildlife Service installation introduced the children to the national Take Pride in America public awareness campaign. "This type of activity is what we hoped the Take Pride in America campaign would inspire," said Interior Secretary Don Hodel. "These young people will be more conscientious public land users after participating in this project," he said. Fish and Wildlife Service Director Frank Dunkle noted that the childen's artwork "exhibited a great deal of talent and pride in their natural treasures." "Developing an attitude of care for America's natural resources begins early in life," according to David Walsh, assistant director for the center. "We've carried the message of citizen involvement in taking care of all the public resources of this nation to the school children," he said, The posters were displayed again at the Interior Department during the first week of November when the Duck Stamp artwork was exhibited.

Duncan Detailed to Denver Center

Director Frank Dunkle has detailed Marvin P. Duncan of Region 6 to the Fish and Wildlife Service Denver Finance Center to study and improve operations.

Dunkle's action was part of the response to a General Accounting Office (GAO) investigation of the Service's Fiscal Year 1983 year-end financial reports. It was alleged that the Service's 1983 financial statements "may have been deliberately understated and that, after being informed, agency management failed to report the violation as required by the Anti-Deficiency Act," according to Representative Jack Brooks of Texas, the Chairman of the House Committee on Government Operations.

Brooks said the GAO final report "concludes that the lack of adequate control over the Service's financial transactions at the end of Fiscal Year 1983 resulted in inaccurate financial reports."

Secretary Hodel in October advised Brooks that "since the incident, a new Director of the Fish and Wildlife Service and a new headquarters management team have been appointed." He also noted that since completion of the investigtion by GAO, the Assistant Director for Administration and the Chief of the Finance Center have left the Service.

"The Service has recently reorganized its program management and organization structure," Hodel said. "One key feature under the new organizational alignment that will take effect on October 1, 1986, is the responsibility for fund accountability that each of the eight Regional Directors has under the Service's administrative control fund system." The Finance Center in Denver conducts accounting and bill payment for the Service.

Duncan, a career Service employee, most recently has served as Assistant Regional Director, Administration, Region 6.

A Message From the Director

In this issue, I want to share my policy regarding release of information to the public and media.

First, scientific and technical data developed by the Service are in the public domain. We should make them available to requestors within the reasonable and practical constraints of time and resources. In some instances, however, the requirements of a peer review process must be completed prior to release of such data as well as reports that disclose, interpret, or analyze certain research findings. You should, of course, inform your supervisor of requests for data. It is also incumbent upon us as professionals to insure that anyone receiving Service-generated data know the limitations and qualifications inherent to the materials provided. For instance, should the data be unrefined, inconclusive, or incomplete, you have a professional obligation to clearly explain this to the requestor. This approach is essential to protect the scientific credibility of the Service.

Second, concerning policy questions, it is of utmost importance that we state the position of the Service correctly. I draw a clear distinction between open and prompt disclosure of scientific information and the act of voicing Service policy. Policy is the responsibility, at various levels, of management. If you are asked policy questions and the subject is not under your purview, you should defer to the appropriate person responsible for that policy. This is to insure that the public and external agencies are not confused by our positions. I realize all employees will not necessarily agree with all Service policies. However, once a decision is made, it is important that it is reported accurately.

This should clear up any previous misunderstandings about the Service policy toward communication with external entities.

A simple rule of thumb is that we do not withhold public information. I expect each Service employee to use good judgement and common sense in its application.

The Fish and Wildlife Foundation: An Update

Still in its first year of active fundraising, the National Fish and Wildlife Foundation (NFWF) has secured over $560,000 in direct donations and letters of commitment for wildlife conservation activities. It is emerging as a significant source of support, not only for Service projects, but for private, state and international efforts as well.

"Our goal is to have the Foundation in a position of cooperation with virtually all sectors of the conservation community," explains Charles "Chip" Collins, Executive Director of the Foundation and Secretary to the Board. "We are happy to be able to provide the conduit for private organizations and individuals to support specific programs of the Service, but we're also undertaking projects involving additional sectors of the conservation community addressing important wildlife issues."

The largest single project-related grant received by the Foundation is a $60,000 challenge grant from the William H. Donner Foundation to conduct a satellite telemetry tracking project to determine movements and distributions of the endangered Kemp's Ridley sea turtle. This cooperative effort will involve the Service as well as Oceanic and Atmospheric Administration's National Marine Fisheries Service, the National Park Service, and the Mexico Fisheries Department. The Foundation's role will be, in Collins' words "to provide the glue that holds the project together."

Other recent contributions include $50,000 from the Miller Brewing Company and the "Save the Eagle Campaign" in association with the International Association of Fish and Wildlife Agencies. This money combined with $20,000 in matching funds from Congress will be distributed to fourteen States in award grants ranging from $3,250 to $25,000 for bald eagle restoration projects.

The World Wildlife Fund-U.S. recently contributed $40,000, and the Service provided $15,000 for the production and printing of "Buyer Beware," a brochure advising foreign travelers of regulations concerning international transportation of wildlife products. The program will be expanded with an additional $15,000 in Congressional matching funds.

Two $100,000 challenge grants have also been received from Mr. David Packard and the Shell Companies Foundation. The grant must be matched 2-to-1 by other private sources. Both Mr. Packard and Mr. John Bookout, Shell's President, are members of the Foundation's Board. Safari Club International and Chairman of the Board Thomas G. McMillan offered $32,000 to conduct a survey on jaguar populations in Central America. Other donations include $21,000 from The Foundation for North American Wild Sheep to assist the state of Nevada in a coordinated project with other western States to reestablish wild sheep populations in suitable areas, and $17,500 from the Mzuri Wildlife Foundation and Thomas McMillan to support a waterfowl banding project in California.

The National Fish and Wildlife Foundation was created by Congress in 1984 to encourage the private sector to assist in the attainment of national wildlife conservation goals. Its nine member Board is composed of private citizens appointed by the Secretary of the Interior. The Foundation was authorized to receive matching funds from Congress for private contributions it raises, and Congress has appropriated $250,000 in the FY 87 budget for that purpose.

Although the Foundation's programs and activities are not necessarily directly tied to the Service, many were identified as high priority issues through a survey of Service personnel conducted by the Foundation. That poll resulted in a list of 90 possible projects.

The number was later narrowed to a manageable size by the project review committee of the Board of Directors in consultation with Service regional directors. During the process of elimination, each issue was prioritized, and consideration was given to what other conservation organizations were doing in the area. A final factor was whether the Foundation could play a viable role in coor-

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photo courtesy National Fish and Wildlife Foundation

Shown above are representatives of state wildlife agencies that will share in a recent contribution of $50,000 from the Miller Brewing Company and the "Save the Eagle Campaign" in association with the International Association of Fish and Wildlife Agencies through the Fish and Wildlife Foundation. Front row, left to right are: Ron Marcoux, Montana; Chip Collins, National Fish and Wildlife Foundation; Dan Tearno, Miller Brewing; Col. Robert Brantly, Florida; and Gary Myers, Tennessee.
Left to right on back row, Russ Cookingham, New Jersey; William Morris, Wyoming; Glen Manuel, Maine; Herbert Doig, New York; Steve Lewis, Oklahoma; Temple Reynolds, Illinois; Jack Bails, Michigan; Larry Wilson, Iowa; Larry Gale, Missouri; Clayton Lakes, Ohio; and Larry Shannon, Michigan.

dinating the successful completion of a project.

"In most cases," notes Collins, "our role is to forge cooperative efforts between the Service and/or other agencies and funding sources needed for a high priority issue, although we will also execute projects on our own where specific gaps are identified that no one else is filling."

He points to the Kemp's Ridley project as one of those selected not only because of the species' critical status, but also due to the high level of interagency and international cooperation and coordination required by the project.

The Foundation is currently seeking funds to assist a striped bass research program in the Chesapeake Bay involving the Service and the states of Maryland and Virginia; an educational program in Alaska on four species of Arctic nesting geese with declining populations; wetlands protection efforts in San Francisco Bay; and education efforts concerning nesting shore birds along the Atlantic Coast.

Employee Recognition & Incentives Program

Vicki Gannon
Personnel Management
Washington, DC

Did you know that currently throughout the Federal Government more than one in every five suggestions is adopted and cash awards are given for many of them? And, it is estimated that employees' suggestions result in a Governmentwide benefit/award ratio of 25:1 annually!

The suggestion program was established to motivate employees to examine all aspects of Government operations and to seek out and suggest ways to improve its efficiency and effectiveness. It further provides employees a channel of communication with management and an opportunity to participate in the accomplishment of goals and objectives.

When a suggestion is adopted, the suggester may receive a cash award based on the savings to the Government during the first year the idea is used or based on its value and extent of application.

All employees are encouraged to participate in the suggestion program. However, supervisors and management officials are eligible to receive cash awards only for those suggestions which pertain to work outside of their area of supervision and are adopted for use in organizational units other than their own.

Sound and workable suggestions come from using a systematic approach to find the *best* improvements. Here's how:

FIRST: Take a critical look at your activity and its functions. Concentrate on what you know best. People who are closest to the work being done usually make the best suggestions. In many cases ideas occur because of a problem encountered. It helps to ask some basic questions, such as how you or your organization can:

- reduce the frequency of equipment repairs or make repairs at less cost
- substitute a less costly material or piece of equipment
- rearrange equipment for more efficient handling
- reduce or eliminate downtime on equipment
- reduce administrative time
- avoid duplication of effort/combine two operations into one

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- reduce, simplify or eliminate reports and other paperwork
- correct or reinstitute a lapsed procedure
- reduce energy consumption
- improve in areas concerning safety/health and security

SECOND: Get and analyze all the facts. Seek advice and help for supervisors and co-workers. Team up and submit a group employee suggestion if you'd like.

THIRD: Develop and perfect your idea until it satisfies you.

FOURTH: Put your idea in writing. A suggestion form can be obtained from your servicing personnel office. "Sell" your idea by explaining (1) the present practice, procedure, or item being used, (2) the improvement you are suggesting, (3) where and how it can be used, and (4) what savings or benefits will result. When available, visual aids such as photographs, sketches, drawings or blueprints may help to futher explain the idea.

FIFTH: Send your suggestion to the program administrator in the servicing personnel office. Don't delay—someone else may have the same idea. The one that is received first is the one that is eligible for consideration.

Your suggestion will be reviewed for eligibility and, if eligible, assigned a control number and sent to the person(s) most technically qualified to evaluate it. If you don't receive an acknowledgement of your suggestion within a reasonable period of time, follow up to make sure it was received and is being processed. Once an evaluation has been completed and returned to the program administrator, you will be notified of the evaluation results. If adopted, a determination will be made as to whether or not the suggestion meets the minimum requirements for granting a cash award.

Because good suggestions reduce the cost of Government operations and, thus, fight inflation, we reap the benefits as American citizens, as taxpayers, and as Federal employees. There are opportunities for improvement at all levels of Government and everyone can take advantage of them. It's up to us to get involved!

SUBMIT YOUR SUGGESTION TODAY!....WE'LL SEND THE *1986-1987 MALE FULVOUS WHISTLING DUCK STAMP PIN* TO YOU JUST TO SAY THANKS FOR YOUR SUPPORT OF THE EMPLOYEE SUGGESTION PROGRAM!

Congratulations!

On September 26, 1986, Secretary of the Interior Donald P. Hodel honored 59 individuals and groups for heroism, distinguished service to the Government, outstanding contributions to conservation and other achievements enhancing natural resources management.

"These citations are for work and deeds that inspire pride in our Department, pride in America's natural heritage, and pride in stewardship of that heritage," Hodel said. "Today we say thanks to those who exhibited great heroism in a moment of danger to rescue others, to those whose contributions have been made during many devoted years of determined and effective effort in government service, and to those private citizens and institutions who have offered generous assistance so that we can do a better job, or so that we can accomplish together that which we could not accomplish separately," he added. "It takes such teamwork if we are to be good stewards of the immense resources of America."

The Service was pleased to host the following award recipients honored at the Convocation.

Mr. HARVEY K. NELSON, Regional Director-Region 3, and MR. GUY W. WILLEY, Retired Biological Technician from the Blackwater National Wildlife Refuge in Region 5, each received the DISTINGUISHED SERVICE AWARD, the highest honor bestowed by the Secretary to employees of the Department. The awards were presented to MR. NELSON and MR. WILLEY in recognition of sustained dedication to duty and highly significant contributions throughout their careers with the Department.

MR. LEON JACK SALMELA, Director of the Brevard County Mosquito Control District in Florida, received the CONSERVATION SERVICE AWARD, the highest honor bestowed by the Secretary to private citizens and groups for direct contributions to the mission and goals of the Department. It was presented to MR. SALMELA for his endless contributions to wildlife conservation through effective mosquito control techniques and his personal dedication to effective management of wildlife resources.

MS. MARCIA HOBBS and MR. RALPH CRANE represented the Greater Los Angeles Zoological Society and MRS. BETTY JO WILLIAMS and MR. WILLIAM TOON represented the Zoological Society of San Diego as they, too, received the CONSERVATION SERVICE AWARD. It was presented in recognition of contributions made by the Los Angeles Zoo and the Zoological Society of San Diego toward the recovery program of the endangered California condor in the form of funding, facilities, staff and the development of educational materials and programs on the condor project.

In the spirit of the Take Pride in America campaign, each of the award recipients has made significant contributions toward the betterment of our nation's resources and to the people who enjoy them. Congratulations!

more Congratulations!

The Service has been the benefactor of countless contributions, achievements and overall superior performance by its employees. All Service employees are to be commended for their dedication and contributions. Special congratulations go to the following individuals for the honor bestowed upon each of them during FY86 in recognition of their noteworthy achievements.

MERITORIOUS SERVICE AWARD. This award is granted to employees by the Secretary for an important contribution to science or management, a notable career, superior service in administration or in the execution of duties, or for initiative in devising new and improved work methods and procedures. Recipients of this prestigious honor during FY86 include:

Wayne D. Adams, Crab Orchard National Wildlife Refuge Region 3
Paul H. Eschmeyer, Office of Information Transfer, Ft. Collins, Co.
Wilbur L. Hartman, Great Lakes Fishery Laboratory, Michigan
Robert A. Hodgins, Division of Law Enforcement, Region 3
Maurice G. Hornocker, Cooperative Wildlife Research Unit, Idaho
Bartholomew W. O'Gara, Cooperative Wildlife Research Unit, Montana
Robert H. Shields, Office of the Regional Director—Region 6
Michael J. Spear, Regional Director—Region 2

SUPERIOR SERVICE AWARD. This award is granted to employees by the Director for the accomplishment of a particularly significant assignment, the development of a new method that substantially increases efficiency or economy of operations, or for extremely competent performance of duties. Recipients of this honor during FY86 include:

Rick D. Leach, Division of Law Enforcement, Washington, D.C.
John A. Morrison, Division of Technical Services, Region 7
Carol B. Williams, Office of the Regional Director, Region 1

EXEMPLARY ACT AWARD. This award is granted by the Director to employees of the Service who have acted in a valorous or humanitarian manner in lending assistance to another individual in an emergency or critical situation. While the act may not have involved personal risk to the employee, his/her prompt and decisive action contributed to the saving of a life or may have proved to be of great benefit to the victim(s). Recipients of this honor during FY86 include:

David S. Bruhn, Hagerman National Fish Hatchery, Region 1
Paul R. Heine, Columbia National Fishery Research Laboratory, Missouri
Devona L. Lam, Colorado River Fisheries Project, Region 6
Vidal Martinez, Blackwater National Wildlife Refuge, Region 5
Lawrence J. Moats, Hagerman National Fish Hatchery, Region 1
Lydia A. Trinca, Colorado River Fisheries Project, Region 6

SPECIAL ACHIEVEMENT AWARD FOR NONRECURRING SPECIAL ACT OR SERVICE. This award is granted to individuals or groups who have performed substantially beyond and outside of normal job requirements through a one-time, special act or service. Among those who have received this honor during FY86 are the following:

Group Award to employees of the former Office of the Associate Director—Federal Assistance, for their superlative technical and administrative efforts in preparation of, during and following the Fifth Conference of the Parties to the Convention on International Trade in Endangered Species (CITES):

Arthur J. Lazarowitz
Jeffrey P. Jorgenson
Mark R. Albert
Sylvia L. Herring
Elaine L. Fox
Marjorie B. Nash
Betty L. Childress
Angela A. Vaughan
Justina T. Lee

Group Award to employees of the Division of Law Enforcement for their role in "Operation Falcon," the largest and most complex investigation aimed at the commercialization of protected raptors, particularly the peregrine falcon:

Donald J. Schmidt
Rick D. Leach
Carl L. Mainen
Edward C. Spoon
William B. Zimmerman
Patricia L. Rogers
John T. Webb

Group Award to employees of the Division of Law Enforcement for their role in a major covert investigative case established to combat the illegal trafficking in protected fish and wildlife resources along the eastern seaboard and Pennsylvania:

Kevin R. Adams
Leo F. Badger
G. Adam O'Hara
David C. Kirkland

Group Award to employees of the Division of Law Enforcement for their role in "Operation Trophykill," one of the most significant and successful investigative efforts aimed at the commercialization of unlawfully taken big game:

Peter S. Nylander
John D. Gavitt
John R. Griest

Group Award to employees of the Ecological Services Field Office in Houston, Texas for the outstanding development of "Wetlands... the water's edge," an educational exhibit on the value of wetlands located at AstroWorld, a theme park in Houston:

H. Dale Hall
David C. Frederick
Allan J. Mueller
Denise L. Baker
Julie K. Massey
Michael T. Morgan
Lawrence R. Gamble
Elaine S. Schaffer
Francisca G. Garza
Peggy S. Mullins

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FWN Interviews Soviet Fishery Researchers

(left to right) David Klinger, Elizabeth Lipscomb (both FWN), Amy Evans, Steve Kohl, Dr. Viktor Komov, and Dr. Boris Flyorov.

Dr. Boris Flyorov and Dr. Viktor Komov, both from the Soviet Union's Academy of Sciences Institute of the Biology of Inland Waters, recently visited the United States to join U.S. researchers in water quality studies under a US-USSR environmental agreement. Their work took them to various locations across the country, including the Great Lakes Fishery Laboratory in Ann Arbor, Michigan and the Natural Fisheries Research Center in Columbia, Missouri.

Fish and Wildlife News met with them in Washington D.C. near the end of their trip and had the opportunity to talk with them about their work both here and in the Soviet Union. This is the English text of that interview, which was conducted in English and Russian with the help of Steve Kohl, of the Service's International Affairs Office, who served as interpreter.

Special thanks go to Kohl and to Amy Evans of the Environmental Protection Agency, who coordinated the scientists' visit to the Service's Washington offices.

FWN: Can you tell us a little about the work that you have been doing in the United States?

FLYOROV: We came to the United States to continue studies on water quality and conservation which we have been doing cooperatively with the U.S. for about 10 years under the US-USSR Environmental Agreement. By coming here, we are carrying out one of the scheduled exchanges under this water quality program.

FWN: Does this represent the first trip that you two have made over here?

FLYOROV: This is my fourth trip, and for Dr. Komov, it is the second. On this trip we were working to determine water quality in the Detroit River. The interesting part of this trip for us was the opportunity to use the latest bioassay techniques that have been developed here in the United States.

FWN: What was your initial impression of the Detroit River?

FLYOROV: We were very struck with the great concentration of industry in Detroit. In fact, even before carrying out the biological testing, we could predict that the quality of water in that river was far from ideal. And the results of the bioassay bore this out.

During this trip we were able to work with two new biological methodologies. One involved the use of a plankton, *Ceriodaphnia dubia* which is also found in the Soviet Union, and the fathead minnow, which is not endemic to the Soviet Union, although we do have a similar species.

FWS: Was this the first time they had been used in the United States?

FLYOROV: Dr. Donald Mount of the U.S. Environmental Research Lab (EPA) in Minnesota has worked with the *Ceriodaphnia*, but testing in the Great Lakes region has not been done on a wide scale. Ours was the first significant field test using the minnow as an indicator. In the Soviet Union, we use similar, but not exactly the same kinds of bio-indicators for water quality testing.

Our goal is to standardize the indicators used in the two countries to perform these tests, and one of the best results of our trip here was the realization that we could come to agree on standardized indicators for water quality testing. I hope that now, having found a standard, we will be able to compare data accurately.

FWN: Why was the Detroit River chosen as the testing site? Are there similar settings in the Soviet Union that have the magnitude of water quality problems that the Detroit river has?

FLYOROV: U.S. specialists chose the Detroit River as the testing site, probably because they already knew that it was polluted to a significant degree and that therefore, there would be a definable problem.

Water pollution is a problem for the Soviet Union, as it is for the United States, but perhaps it's not quite as acute in the Soviet Union. For example, take the Volga River, which has a lot of industry along it. It is much cleaner than the Detroit River. Of course, there are parts that suffer some of the same problems as the Detroit River.

FWN: So toxic contaminants and water pollution are issues of concern in the Soviet Union, as they are in the United States?

FLYOROV: It's an international problem. The more effort that is devoted towards working out methods of standardization and combating the problem, the better.

FWN: Could you each describe briefly your functions in the Institute of the Biology of Inland Waters?

FLYOROV: This institute, which is located in Borok, the source of the Volga River, is considered to be the

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largest hydrobiological academic institution in the U.S.S.R. Our studies are concerned with biological and microbiological processes occuring in inland fresh water. We determine both the quality of the water and its biological productivity. We look at the interaction between production and destruction, species composition, population dynamics—everything in the hydrobiota. Everything that can possibly be studied, we do.

The institute's ichthyology laboratory conducts research on commercially important freshwater species of fish, including forecasts of sizes of fish catches, the biology of commercial fish, and antigen research. We also do a lot of work on the behavior of fish located around large installations, such as the dams on the Volga. Thus, we can make recommendations on the location of fish passages, or on how to improve existing fish passages.

I direct the physiology lab. We study the effects of the most harmful toxic substances on water quality, of which one of the most important is pesticide effects. Viktor Komov works primarily with acidification.

We have brought to the United States a new biological assay method which we use in the Soviet Union for determining the salinity and heavy metal content of the water. As the control organism we use medicinal leeches. We left a translation of an article describing this method with Dr. Mary Henry, who works in the Service's National Fisheries Center in Ann Arbor.

Medicinal leeches are very easy to keep alive and transport, and they display a high degree of sensitivity to changes. These leeches also reproduce readily, so that we have what you might call a "biological factory." Since we use leeches for curative purposes in the Soviet Union, the General Directorate for Pharmaceuticals also maintains these "biological factories," ensuring a continuous supply for our work.

As far as we know, this specific species of leech, *Hiruda medicinalus*, does not exist in the United States. However, we brought here a list of North American leeches similar to ours, so that if this method interests our American collegues, they could choose substitute leeches for the test. Scientists at the Johns Hopkins Chesapeake Bay Lab have already expressed interest in this.

We actually wanted to bring the leeches over here, but didn't have time to get the necessary export documents completed. And we were hesitant to just stick them in our suticases and bring them "unofficially," because leeches are, after all, parasites, and we were afraid that U.S. Customs might think we were trying to bring in mysterious bacteriological entities. But seriously, we hope to get the paperwork completed so that next time, we can bring them along.

FWN: Dr. Komov, could you discuss the acidification problems that you are currently studying?

KOMOV: I am a physiologist and am studying ion exchange processes, especially ammonia ions and ions accompanying low PH factors in the water. The blend of physiological and toxicological objectives is of primary importance to us.

We had previously found in our laboratory that calcium exchange in fish can be adversely affected by ammonia. We tested this jointly in Ann Arbor and Columbia using a simply designed experiment where fish were introduced to various concentrations and solutions of chloride and ammonia. Since the results were obtained only in the final few days of our visit, we have not yet completed our analysis of the effects. However, I can say preliminarily that ammonia did have an effect on calcium exchange.

I must say that the work has been very well organized and carried out during the last four weeks, and I feel the experiments were a success. For this, we are grateful to our American collegues: Mary Henry with the Great Lakes Fisheries Research Laboratory in Ann Arbor, Director John Stanley of the Ann Arbor Lab, Director Richard Schoettger of the Columbia Lab, and all the staff of the two labs as well.

FLYOROV: Let me add that during the course of our research here, we have come to expect a particularly well organized way of going about our joint work at these U.S. laboratories. There is definitely a feeling of genuine mutual understanding.

FWN: Getting back to the acidification research, how great is the concern in the Soviet Union over the problem of acid rain?

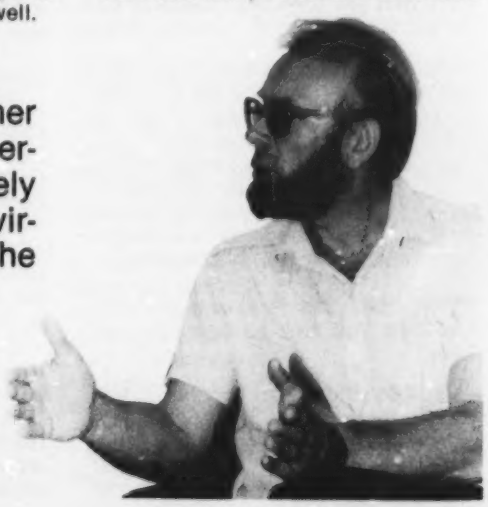
KOMOV: In general, about 40 percent of all the sulphur emitted in Europe is produced by Soviet industry. Because sulphur is diffused over such a large area in the U.S.S.R., the problem is only now becoming one of concern, But in my opinion, if something radical isn't done to forestall the problems associated with sulphur emission soon, we will have a much more serious situation in the U.S.S.R.

Up to this point, however, we have not noted any problems affecting entire populations of fish as a result of acid rain. There are two sides to this: the acid precipitation itself, and the water which receives the precipitation. If the buffering power of the water is great, it may be a number of years before the effects of the acid rain are ever known.

FWN: What mechanism exists in the Soviet Union to translate your research findings into regulatory measures. Is there an environmental protection agency?

FLYOROV: We have two standards for "maximum permissible concentrations." One is in the human sanitation and hygiene area, and the other is in fish husbandry. It's a parallel system. Our results help determine the maximum permissible concentra-

"Ivan Ivanovich, another way of saying the average citizen, is definitely concerned about environmental matters in the U.S.S.R."



Dr. Boris Flyorov

tions for fish husbandry—basically, what's good for the economy. There is some discussion going on now in the U.S.S.R. about a unified system for determining maximum allowable concentrations instead of one for health and one for economics.

We also work with an agency connected with the U.S.S.R. State Committee for Hydrometeorology and Environmental Control on the quality of the hydroenvironment.

FWN: Where does the Ministry of Fisheries fit into all of this?

FLYOROV We are a totally separate institution from the Ministry of Fisheries. But there are other institutes that do belong to the Ministry of Fisheries which work on some of the same problems in determining maximum permissible concentrations in water. The most well known is probably the State Institute of Fish Husbandry of Lakes, located in Leningrad. It has various affiliates around the country. So the Ministry of Fisheries does some of the same kinds of work, but in a separate capacity.

FWN: How would you characterize the overall level of environmental awareness of the Soviet population?

KOMOV: That's an interesting question. When I travel around my country, I often meet people who ask me about my work. And when they find out that I'm a water biologist, they usually ask me about the Volga River. My relatives are also very interested in my work.

FLYOROV "Ivan Ivanovich" (another way of saying the average citizen) is definitely concerned. One example is the great discussion that has been raised throughout the U.S.S.R. on the question of protecting Lake Biakal. What we need to do in the future to protect this lake in Siberia is currently being decided. This is a project entailing a lot of general discussion, and not just within the scientific community.

FWN: We talked earlier about standardization or research methods between the two countries. Are there any major differences in water quality, as far as particular pollutants, in the two contries, or are we dealing with the same problems?

FLYOROV First and foremost, it is very striking that this is definitely an international problem. And it's also a problem that these substances are persistent and constantly occuring. We see hydrocarbons, chloro-organic pesticides, and PCB's (polychlorinated biphenyls)—basically the same thing that you have.

And we've talked about acid rain; the atmospheric changes are global. We also have precipitation from heavy metals—a world problem. And of course, we both have all kinds of oil pollution. When biological and organic elements from waste water are released, you've got eutrophication, primarily of nitrogen and phosphorous. We not only have these in common, but they represent the most basic ways pollutants are introduced into the environment.

So I can assure you that the problem of discovering and combatting these pollutants is definitely an international one. Consequently, they should be resolved through the combined efforts of many countries.

FWN: You are here under the terms of the Environmental Agreement that our countries share. Why do you feel this agreement has been so successful and able to survive recent political differences between the U.S. and U.S.S.R.?

KOMOV: Basically, we live under one sky, and the conservation of living resources is something that stands apart from politics. Political decisions ought to take as their basis the conservation of life on earth. Both our governments believe this, and this is why the Environmental Agreement has survived.

The approaches taken by the United States and the Soviet Union in toxicological research are very similar. The first step to be taken is to determine what damage has been done, and the level of that damage. And the second step, which is the most important, is to develop ways to go about eliminating these harmful effects. And if you read publications stemming from our 10 years of cooperation, the similarities become even more obvious.

FWN: Thank you both for the opportunity to conduct this interview. Can we expect you back in our country any time in the near future?

FLYOROV Our joint work is expected to continue, and other scientists from the Soviet Union will be working here as well. . .And next time, perhaps we'll bring the leeches.

—David Klinger
Washington Office

cont. from p. 6

EMPLOYEE SUGGESTION AWARD. This award is given to an employee or group of employees whose idea for improving the effectiveness and efficiency of operations has resulted in substantial benefits to the Government. Among those who have received this honor during FY86 are the following:

Group suggestion award to employees of the Craig Brook National Fish Hatchery who developed a method for improved fish weighing through the use of a manometer. This device converts pressure changes into inches of water displaced, an operation that is combined with loading fish onto distribution trucks. The use of this method dramatically improves the accuracy of displacement weighing.

Peter M. Burke
Michael A. Hendrix
Thomas R. Kane
Gerald Marancik

Individual award for ideas which improved methods for tracking funds under the Accounting Systems Improvement Project.

Beverly A. LaVine, Region 3

Individual award for an idea that would liquidate undisclosed obligations under Blanket Purchase Agreements (BPAs) and Limited Open Travel Authorizations at the end of the fiscal year.

Ethel E. Pederson, Region 3

Individual award for an idea to create an entry column on the PAY/PERS Leave and Earnings Statement for "Quarters" deductions.

Lowell C. Deede, Region 3

Individual award for an idea to add the statement "Take Pride in America" to the reverse side of the Migratory Bird Hunting and Conservation Stamp.

Eugene A. Rumelhart, Region 5

Individual award to encourage the use of OF-10, Memorandum sheets in lieu of the Service's letterhead stationary for correspondence within the Service.

John R. Caracciolo, Region 9

Vicki Gannon
Personnel Management

Cooperative Effort Establishes Hawaiian Refuge

Peter Stine
Recovery Action Coordinator
Honolulu, Hawaii

Bill Meyer, Public Affairs Officer

Over the last year, about 12,000 acres of the planned 33,000-acre Hakalau Forest National Wildlife Refuge have been acquired. This beautiful koa-ohia rain forest, located on the eastern slope of Mauna Kea on the island of Hawaii, provides vital habitat for seven endangered bird species and a whole array of unique Hawaiian rain forest plants and animals.

The efforts resulting in the protection of this habitat are an excellent example of a cooperative Service endeavor. The events leading to this achievement can be likened to a long-distance relay event. The "race" began in the late 1960s when the newly-formed Endangered Species Office listed 20 species of endangered Hawaiian forest birds, knowing only that these very rare birds apparently were confined largely to the most rugged and inaccessible reaches of the remaining native rain forests of Hawaii.

Faced with limited information and the need to develop recovery actions, the "batons" was passed to Research. In 1975, the Patuxent Wildlife Research Center initiated a monumental effort to survey systematically all the forested habitats of the islands of Hawaii, Maui, Molokai, Lanai, and Kauai and to provide quantitative data on the distribution and abundance of native forest birds. The technical, logistical, and physical difficulties of surveying bird populations in these remote rain forests were formidable. Despite these obstacles, a team of Service research biologists stationed at the Mauna Loa Field Station conducted the surveys from 1976 to 1982. Data analysis over the ensuing two years resulted in the development of distribution and abundance profiles for all forest birds, both native and introduced, and the identification of areas especially rich in endangered bird populations. Detailed vegetation maps also were prepared.

Peter Stine

The Akiapolaau is one of the endangered species inhabiting the new Hawaiian refuge.

With this wealth of information, the Endangered Species staff in Honolulu joined forces with the Research staff and other cooperating agencies and experts to develop recovery plans for the three major island endangered forest bird groups, i.e., Hawaii, Maui-Molokai, and Kauai. Protecting and managing key units of forest habitat on the island of Hawaii were among the top priorities for all endangered species in Hawaii. With the survey information in hand, preserve designs were developed for the key areas and recommendations for habitat protection were forwarded to the decision-makers in the Service. Habitat protection was recognized as especially important in the overall strategies for recovery of these species. Most of the other recovery tasks for these endangered forest birds hinged on securing key areas and maintaining a continuous distribution of health habitat within the range of the species.

Congress, through the leadership of Senator Daniel Inouye and Congressman Daniel Akaka, recognized this need and provided substantial appropriations aimed at acquiring the key Hawaii forest bird habitats. The Hakalau Forest area was selected as the top priority because this area was located in the heart of the highest remaining concentrations of such endangered bird species as the akiapolaau, Hawaii akepa, Hawaii creeper, and Hawaiian hawk.

At this point, the Region 1 Acquisition staff, working with the Pacific Islands Endangered Species staff, rapidly developed and processed all the documents required for an acquisition. The approvals for acquisition of 33,000 acres of the Hakalau Forest area were obtained with virtually no delays. Acquisition of three of the six units has been accomplished over the last year and significant progress has been made toward purchase of the final three units.

The success of this project also should be credited to several other organizations and individuals. The Nature Conservancy of Hawaii has been invaluable in their discussions with landowners and arrangements for the actual acquisitions. The Hawaii Department of Natural Resources also has been a major contributor in making Hakalau Refuge a reality. As an immediate refuge neighbor, the Service looks forward to cooperating with the Department in achieving mutual goals of endangered species conservation.

The "anchor" runner in this successful relay is the Pacific Islands Refuges and Wildlife staff. Even as the acquisition of the refuge continues, the refuge staff is beginning their stewardship role. This refuge has a unique set of management requirements representing technical and physical challenges found nowhere else in the National Wildlife Refuge System. However, the refuge staff can count on the assistance of all of those who "ran a leg" toward the establishment of the marvelous new Hakalau Forest National Wildlife Refuge.

Aransas Manager Dies

On Thursday, December 4, 1986, Aransas refuge manager Frank Johnson died in his sleep of a heart attack. The popular and well-known 54-year-old Johnson held the position of refuge manager at Aransas National Wildlife Refuge since 1973. Frank had been with the Service since his graduation from Mississippi State University in 1954. He served as refuge manager at Wapanocca and Cape Romain refuges, then completed Departmental training and served in the Atlanta Regional Office for 6 years as a planner and acting assistant supervisor.

In a letter of condolence to Frank's widow, Southwest Regional Director Mike Spear expressed the feelings of many:

"Within the U.S. Fish and Wildlife Service, Frank was an institution, loved and respected by all. But beyond that, I am also aware of his qualities as a husband, father, and civic leader. He certainly contributed unselfishly his time, talents, and personality in so many areas. And his achievements were many."

Survivors include his wife, Euner, and three children.

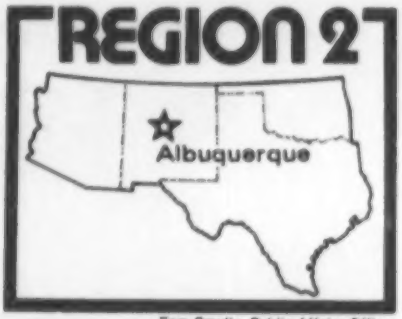
photo courtesy AOPA Air Safety Foundation

In 1983, the Aircraft Owners and Pilots Association's Air Safety Foundation developed a PINCH-HITTER course designed to enable non-pilots to take over the controls of an aircraft if the pilot was incapacitated. It was aimed primarily at the spouses of pilots but can also be valuable to others—such as a number of Service employees—who spend long hours in small aircraft. In addition to possibly proving invaluable, it can also be enjoyable, as reflected in the accompanying article.

Steve Wilson

Conoco Donates Photos to Aransas

The late Frank E. Johnson (right) long-time manager at Aransas National Wildlife Refuge (see accompanying story) in Texas, and Carl Anderson, field supervisor of Conoco Oil Company, view a collection of photographs presented to the refuge by Conoco. The 39 nature-filled photographs entitled "South of Winter-Scenes of Aransas National Wildlife Refuge," by Steve Wilson and Karen Hayden were previously displayed by Conoco at the New Orleans Worlds Fair. When the event closed, the collection was presented to the refuge for permanent display. Conoco has been drilling and extracting oil and gas on the refuge since 1939.



Tom Smylie, Public Affairs Officer

Flight Insurance —Service Style

MARK VANIMAN
BUFFALO LAKE NWR
UMBARGER, TEXAS

It's a wonderful day and you're flying a routine waterfowl survey when suddenly the pilot slumps over in his seat. Unlikely? Yes! Possible? Absolutely!

Most of us who spend time in small aircraft as part of our job don't think about what we would do if the pilot became incapacitated. Could we find an airport or a safe place to land? And if so, could we get the plane on the ground with no or minimal injury to the occupants? This is an important thing to consider no matter how unlikely the situation may seem. As with anything else, it pays to be prepared. A little insurance never hurt anyone.

My first experience with small planes began in 1984 with the inception of the monthly playa lakes aerial waterfowl census. A reluctant flier at first, I gradually became accustomed to most aspects of small plane behavior. However, I had no idea how the craft worked and the various dials and gauges did nothing to offer me a clue. I was quite content just to ride along and count ducks. The thought of an emergency situation hardly crossed my mind.

Then, early in 1985, a memo was circulated in Region 2 proposing that frequent fliers take advantage of a "pinch-hitter" flight familiarization training course to prepare for an airborne emergency. It suggested that students contract for 8 hours of flight time and 2 hours of ground school. Knowing full well that I'd soon jump in a plane, be taught how to land it, and that would be that, I signed up.

I chose my flying school using the basic budget method. I went with the

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John Keeler

LE Agent Tracks Cactus

A 14-foot, 3-to 4-ton saguaro cactus is being loaded on a specially rigged truck in Las Vegas, Nevada, for the trip back to Arizona where it was stolen. Special Agent John Keeler of Yuma, Arizona, has the unusual assignment of conducting an investigation on the theft of a distinctive saguaro cactus taken from the Arizona desert to a Las Vegas, Nevada, landscaping business. The cactus, for sale at $15,000, was taken from Bureau of Land Management land in Arizona where the species is protected, and moved across state lines for sale—a violation of the Federal Lacey Act. The cactus is temporarily being held at Phoenix's Desert Botanical Gardens until completion of the case.

Whooping Crane Undergoes Surgery

Dr. Bret Snyder, Rio Grande Zoo Veterinarian, Albuquerque, N.M., prepares a recently recovered 6-year-old male whooping crane for surgery. Dr. Josh Dein of the Service's Patuxent Wildlife Research Center, and Dr. Mike Richard of Rio Grande Zoo assisted in trying to discover the cause of a grapefruit-sized mass in the intestine. The whooper nicknamed "Beaver" was caught by wildlife biologists on March 5, 1986, near Belen, N.M., after it was discovered to be in weakened condition by a concerned citizen.

The surgery further revealed numerous other small, Ping-Pong ball sized abscesses that later proved to be the result of the crane having avian tuberculosis. Due to massive tuberculosis infection, the bird died shortly after surgery.

Three whooping cranes of the Rocky Mountain population have been confirmed as having avian tuberculosis in the past five years.

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least expensive instructor who turned out to be the airport manager at Hereford Municipal Airport located just west of the refuge. He was a very amiable person with over 10,000 hours of flight time who seemed to know everything about flying. It's nice to feel confident in the person flying the plane and I felt comfortable with John from day one.

I set up my first lesson for early February. I assumed we'd spend some time on the ground talking about flying, but the lecture only lasted as long as it took to walk to the hangar.

The plane we would be flying turned out to be a Cessna 150—a small single-engine two-seater. After we performed a short but thorough preflight inspection of the plane, the instructor handed me the key and said, "Let's go!" The next thing I knew, we were flying.

During the first lessons we covered the basics of flight—or plane attitude— which includes climbing, gliding, level flight and turns. During subsequent lessons, we examined the four attitudes in more detail and I began executing simple maneuvers. The course became more and more interesting with each lesson as I developed more confidence (or the instructor became more confident in me).

All went well until the instructor stated, "Next time, we'll learn what to do when the plane stops flying." I wouldn't have been too anxious about this particular lesson except that he wanted to do it in the air.

As it turned out, I really enjoyed the flight. We took the plane to about 6000 feet, climbed sharply, and stalled a number of times just so I would know what it was like. A plane will stall if the nose is pointed up and the airspeed drops below a certain level.

When this happens, one or both wings will lose their lift and the plane will drop toward the most unstable wing. Almost instantaneously, the bottom falls out, the nose pitches down, and the pilot is looking directly at the ground. The feeling is not unlike a carnival ride.

Recovery is really quite simple. All one needs to do is let go of the controls and the plane will level off. We also shut the engine off in the air and landed the plane, again to become familiar with the situation should it occur. This lesson is required by the Federal Aviation Administration and is an important one.

Every time we flew I became more

and more involved in landing the aircraft. One day we did a series of "touch and goes,"—landing and then immediately taking off again.

The final lesson involved cross-country navigation. We spent some time on the ground plotting a course with flight charts or maps and simple instruments. We then hopped in the plane for a cross-country flight. The entire flight covered about 100 miles using radio navigation aids. We landed at Amarillo International Airport in order to introduce me to a larger controlled airport with a tower and the procedures used in dealing with air traffic control.

When the lessons were completed, the instructor "certified" me able to land most any small plane. He wouldn't guarantee a smooth landing, but he did believe I could now get one on the ground without "bending it too badly." All totaled, I spent 8 hours in the air.

The sessions certainly opened my eyes to the many aspects of flying and riding in small planes. I never imagined myself flying a plane, nor has getting insurance been one of my favorite things to do. But this is one policy that I thoroughly enjoyed obtaining. As with any insurance, I hope I never have to use it. Still, it sure is nice to have.

The Nature Conservancy Honors Realty Employee

Tom Smith, Southwest Regional Supervisor for Realty, receives the Presidential Public Service Award from The Nature Conservancy (TNC) President, William Blair, Jr. Smith (along with 3 others) received the award at a recent TNC Board of Governors meeting in Washington, D.C.

Smith was recognized for his commitment to the preservation of the natural diversity of this country. Tom Massengale, TNC Southeast Regional Director, stated during the ceremony, "Mr. Smith has been an extraordinary example of what one person can accomplish and it is with deep gratitude that the Conservancy awards him the Presidential Public Service Award."

Jim Ross, Public Affairs Officer

Service Honors Three Who Helped Refuge Establishment

Faces that should be familiar to many veteran Service employees are (left to right): Forrest A. Carpenter, retired, former Refuge Supervisor for Region 3; Mrs. Ruth Nelson, widow of Urban C. "Pete" Nelson, former service employee and Alaska Commissioner and ARD in Regions 3 and 1; and Les Dundas, retired, former Region 3 ascertainment specialist during the time when Sherburne National Wildlife Refuge was established. They were attending the Sherburne pool dedication ceremony and are standing at the bronze plaque that notes the wetland impoundment (background) dedication to "Pete" Nelson.

James R. Clapp
Assistant Refuge Manager
Sherburne, NWR, Region 3

It was a cool, damp day in May when approximately 150 guests gathered on the Sherburne National Wildlife Refuge in central Minnesota to pay tribute to three men whose efforts culminated in establishment of the refuge.

The event centered on dedicating three wetland impoundments along the refuge's Wildlife Management Drive in their honor.

The three men, now all deceased, are: Erving W. Bohm of St. Cloud, Minnesota; Urban C. "Pete" Nelson, a long-term Service employee whose career included being Commissioner of the Alaska Game and Fish Depart-

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To the Editor,
Fish and Wildlife News:

We think your publication is the best medium for a message that we would like to convey to our Fish and Wildlife Service family. Accordingly, we would appreciate it if you could publish the following letter and poem in your next edition:

Dear Fish and Wildlife Service friends,

We, the Weier family, want to thank all of you across the Nation who kept us in your thoughts and prayers as we endured the news on May 12 of David's canoeing accident and subsequent 10-day search for his body. One of the things that helped sustain us, in addition to your own expressions of concerns, was the knowledge that David died doing something he thoroughly enjoyed: canoeing a wild and beautiful river in the great out-of-doors. So that you might know a bit more about our son and be comforted as we were with the circumstances of his death, we wanted to share a poem with you that he wrote 3 years ago when he was sixteen:

THE PLACE I LOVE

David Wayne Weier

I love the place which has no roof,
where time and space remain aloof.

Where men, and beasts, and birds that fly
can have no cares beneath the sky
except for living out the day
and wishing dreams would come their way.

The grass, and weeds, and trees live here
to give a home to rabbit and deer.
For this is the only home they need—
an open sky, and a place to feed.

The birds and creatures of the air
traverse the sky when the day is fair.
One could do worse than fly all day
and return at night to a nest of hay.

The lakes and rivers are all here too,
which color this land with mirrors of blue.
And in these waters fish do swim
with a flash of the tail, and a flip of the fin.

And o'er this place a sun does burn
which heats the air and feeds the fern
and provides for everything that breathes
from the top of the sky to beneath the seas.

I love the place which has no roof,
where time and space remain aloof.
Where is this place I love so well?
If you question me, I'm sure to tell.

The place I love for evermore?
The great, the peaceful, out-of-doors.

David was a very active person who seldom wrote much of anything, let alone poetry. It meant a great deal to me, therefore, that when he did write a poem—for schoolwork—it was about the out-of-doors. His poem gave further meaning to my life and to my career. I hope it will yours, too.

Sincerely,

R. Wayne Weier
Refuges and Wildlife
Twin Cities, Minnesota

cont. from p. 13

ment; and Charles W. Stickney, of Clear Lake, Minnesota.

Bohm, long-time president of the St. Cloud Community Wildlife Club and member of the Minnesota Conservation Federation executive committee, spent countless hours gaining suport for the refuge from numerous conservation groups, local landowners, Sherburne County Commissioners, and the State Land Exchange Commission.

Nelson was the Service's Assistant Regional Director in Minneapolis at the time. A native Minnesotan, he showed a special interest in the establishment and subsequent development of the Sherburne National Wildlife Refuge.

Stickney, active in local, state, and national politics, was able to gain the assistance and strong support of government officials whom he knew personally through his work and political activities.

The memorial dedication, in addition to acknowledging these individuals, also symbolically recognized the great accomplishment achieved through the cooperative efforts of a private individual and group (Bohm), a Service employee (Nelson), and a local and state government representative (Stickney).

Sherburne, 30,665 acres of valuable wildlife habitat in east central Minnesota, is the site of a diversity of wildlife management and public-use activities. Although the major thrust is management of a natural and man-made wetland system for migratory waterfowl and other wetland birds, the variety of habitats and management techniques used here also allow the refuge visitor to see numerous species of forest and grassland wildlife.

In addition to wildlife management, a special oak savanna research natural area has been established in cooperation with the Nature Conservancy and is being actively managed and studied. This work will provide information which will allow management to return other suitable areas on the refuge to these unique examples of the grassland/oak forest transition, which was much more abundant before the arrival of civilized man.

Each year, over 60,000 visitors are encouraged to view and learn about wildlife, habitats, and management techniques on the refuge through interpretive activities. These include two hiking trails with interpretive loops, an auto tour route, an information center, and an assortment of leaflets and maps. The extensive public use is because the refuge is only about 70 miles from the Twin Cities metro area with a population of about 2.2 million.

Biographical information for each of the three men was researched and prepared for use in developing the bronze plaques to be mounted at the dedication sites and for program brochures.

Local businesses and conservation organizations participated in the dedication with donations totaling over $1,100.

Master of Ceremonies, Elmer L. Andersen, a former Minnesota Governor, introduced the speakers. A historical overview was given by another former Minnesota Governor, Karl Rolvaag. Memorial presentations were made for Bohm by Ed Pikarski, current president of the St. Cloud Community Wildlife Club, for Nelson by Harvey K. Nelson, Region 3 Director and for Stickney by Karl Rolvaag.

After the program, the rain stopped and three buses were led on a tour of the refuge. Brief stops were made at each of the three impoundments being named for the early refuge supporters, and each man's widow unveiled the bronze plaque naming

the impoundment and describing the contributions made by the individual being honored.

During the tour, staff members discussed the history, development, and wildlife habitat management on the refuge and pointed out many examples of vegetation and wildlife. Participants were treated to views of several species of ducks, Canada geese, cormorants, a coyote, and a pair of bald eagles near their active nest.

Even though the weather was not at its best, the program ran smoothly. The families of the three men being honored were extremely pleased, and the pride the widows felt for their husbands was very evident. It will be a day their families and friends, and we will remember for a long time.

YCC Training Saves a Life

First aid training at Necedah National Wildlife Refuge in central Wisconsin paid big dividends last summer for Stacy Sprosty, a Youth Conservation Corps enrollee at Necedah. Just four days after she completed the training she was swimming at a commercial pool near the refuge when she spotted a child at the bottom of the pool.

She rescued the 3-year-old boy and gave him mouth-to-mouth resuscitation until normal pulse rate and breathing returned. A hospital rescue team arrived a few minutes later to take over. They estimated the child had not been breathing for 5-6 minutes while in the pool. He recovered completely.

"I just finished the first aid training four days earlier and it must have been my destiny to save the little boy," she said.

The Artificial Crevasse—Hope for the Delta's Marshes

Steve Joyner
Boque Chitto NWR
Slidell, Louisiana

Delta National Wildlife Refuge consists of 48,800 acres of freshwater marsh at the mouth of the Mississippi River in Louisiana. Historically, the Delta refuge has been one of the most pristine and productive coastal marsh habitats in the United States. Populations of 300,000 wintering ducks and 100,000 geese were reported in the 1950's. The marsh also provides habitat for furbearers, marsh and water birds, alligators, white-tailed deer, and a host of migratory passerine birds. In addition, the marshes provide nursery areas for shrimp and fresh and saltwater species of fish.

Delta's location in the active delta of the Mississippi River provides rich soils and a seasonally fluctuating water regime so basic to fish and wildlife production. The management of Delta is limited to working with natural forces. The primary natural forces are the Mississippi River, its associated hydrologic processes, and natural weather patterns.

Since the mid-1950's, a combination of natural and man-made factors has resulted in a loss of approximately 40 square miles of coastal marsh each year. Between 1956 and 1978, at least 35 percent or 17,000 acres of Delta's marsh has become open water. The major contributors to Delta's marsh loss were severe hurricanes in 1965 and 1969, natural land subsidence, loss of silt deposits through channelization of the Mississippi River, and oil exploration canals which permit saltwater intrusion and resulting marsh erosion.

The Delta refuge currently has 77 active oil and gas wells in two oil fields under lease by Chevron and Texaco. Texaco is actively exploring their field with new canals excavated into the remaining marsh to permit access for drilling barges.

Natural breaching of the banks along the three main passes traversing the refuge has occurred since 1978, resulting in silt-laden waters entering large open ponds during

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Steve Joyner

A vegetative transect survey being conducted on deltaic sploy by Service area biologist Roy Aycock and Delta refuge assistant manager Charles Hebert. Note the lush vegetative growth providing an excellent food source for waterfowl.

Don Pfitzer, Public Affairs Officer

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periods of high water. The silt precipitates out once the water flow decreases. The result is the ponds are once again filling with silt and producing food for waterfowl.

To assist this natural process, a marsh management plan has been devised with the main emphasis directed toward creating man-made crevasses (or openings) in the pass banks to simulate natural crevassing. All damages incurred on the refuge as a result of marsh destruction by oil exploration activities are now mitigated by having oil companies dig crevasses at sites designated by the refuge staff.

The first man-made crevasse was dug in September 1983, and the result has been very encouraging. Texaco has recently offered to provide up to $100,000 to fund refuge marsh creation through the man-made crevasse program.

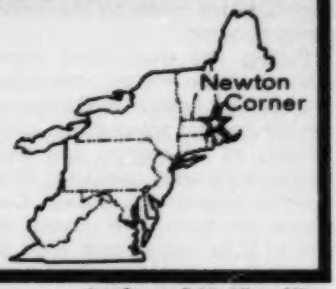
Delta Refuge's marsh may never be as productive as during its prime years, but the crevasse program is expected to provide vital new habitat for 200,000 wintering waterfowl and the myriad of other fish and wildlife species found on the refuge.

Director Takes Part in Chesapeake Event

Director Dunkle congratulates Will Baker, President of the Chesapeake Bay Foundation, who received the Rachel Carson Award.

Director Dunkle, who played a leading role in the annual Chesapeake Appreciation Days, November 1-2 in Annapolis, presents a special Take Pride award to George McGowan (right), president of Baltimore Gas & Electric, for the company's significant contributions to the conservation of striped bass and other fish and wildlife of Chesapeake Bay. Dunkle and McGowan released the first of 100 2-year-old rockfish reared by BG&E.

REGION 5



Inez Connor, Public Affairs Officer

Of Salt Air & Sea Swallows

Paul Nickerson
Endangered Species
Newton Corner, Massachusetts

As biological technician John Lortie eased the zodiac boat into Pleasant Bay, we marveled at the bird life surrounding us in the narrow, highly productive salt water inlet that separates Monomoy National Wildlife Refuge from the Cape Cod mainland. Lortie has taken many similar trips to enforce trespass laws or conduct bird census work, but this time the mission was a bit different. Dr. Michael Guillen, Science Editor from Channel 5 in Boston, was filming a five-part series on endangered species of New England, with the roseate tern the subject of one of the segments. The tern was recently proposed for listing as a threatened species and Dr. Guillen wanted footage of the birds and their refuge habitat.

The roseate has a spotted history. It was nearly wiped out by the millinery trade before the turn of the century because its delicate feathers added style and soft beauty to women's hats. The few nesting birds remaining in the Northeast were saved by the Migratory Bird Treaty Act, and once protected, their population responded well. By the 1930's the numbers had rebounded to 8,500 pairs, and the outlook was bright—that is until the herring gull began its relentless expansion into the tern's breeding habitat. Terns have been displaced by gulls from many of their former breeding islands and the population has declined to about 2,500 pairs.

The plight of the terns fascinated the TV crew, and Monomoy provided a perfect backdrop for the story. Acquired by the Service during the mid-1940's, the 2,700 acre refuge

stretches about 9 miles south from Chatham, Massachusetts. Its southern end has migrated south and west over the past 200 years while the northern end has been intermittently connected with the Cape. Monomoy was last a peninsula in 1958.

Fish and wildlife on and around Monomoy are both diverse and abundant, ranging from sand lances, small fish that thrive in waters around the refuge, to harbor seals "hauling out" in the winter. Monomoy is a designated wilderness, so its nesting birds are well protected. Notable among them are short-eared owls and northern harriers, both species of concern in Massachusetts; piping plovers, recently listed as threatened along the Atlantic Coast; and two relative newcomers, the oyster catcher and the willet, that have established themselves during the past 15 years.

But it was the terns that we came to see, and we saw them by the thousands. Monomoy provides vital post-breeding habitat for these graceful little "sea swallows" as they assemble here in late summer to rebuild their energy levels after the young have learned to fly. Early evening finds terns returning from their feeding forays to gather on a section of the island reshaped by Hurricane Gloria when she smashed ashore last year.

Here the birds mass by the thousands. When startled, they take flight in unison, creating a rather spectacular show. Few people have seen these huge late summer flocks, because as Chatham native Peter Trull explains, "Researchers are gone by mid-August when the tern's breeding activities are over."

We saw the show, Dick Dyer, John Lortie, Peter Trull, the film crew and I, and we were dazzled by it. Thousands of terns rose and settled again and again like a feathered tide performing for the setting sun.

The filming and interviews lasted into the early evening, but the long day did not dampen anyone's enthusiasm for the project. The crew was very anxious to increase public awareness about endangered species, and now that I have seen the results on television, I consider the time well spent. They photographed diving terns, flyng terns, fishing terns, and lots of tern habitat—the footage all "terned" out well. Over a million viewers tune into the Channel 5 evening news, and for 5 days running, they learned about various aspects of the endangered species story. The terns were a grand addition.

Buffalo Hunt Depicted on Refuge

Mark Lindvall
Fort Niobrara NWR
Valentine, Nebraska

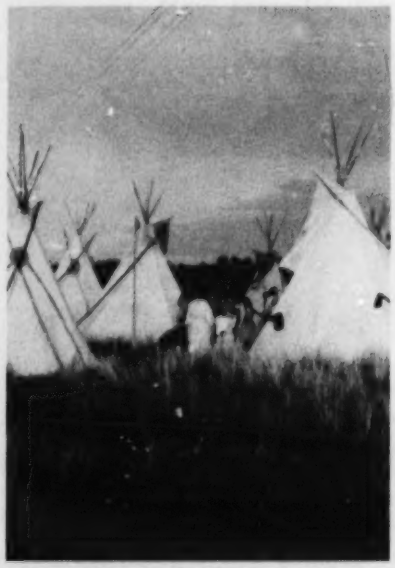
Quiet! Speed, camera, scene 10, part 4, take 1, and action! The cameraman, director, sound recorder, and actors are now ready to shoot another segment of the television movie, "We Are One." In this scene, 12 Omaha Indians are to charge past the camera at full speed, bows raised, and riding bareback. As they thunder past the camera, one falls off and the horse behind jumps over him. This is not in the script, so it's on to take 2. The Indians rein in their horses, line up and get ready to do it again. Even when director Chet Kincaid is satisfied with the scene, it is shot again, just in case.

This activity is part of Nebraska Educational Television's filming of a story about two Indian boys' first buffalo hunt. The time is the late 1800's and the band of Omahas have left their permanent lodges to hunt buffalo on the Nebraska plains. Art director Art Kohrs has researched what it was like in those days and recreated a realistic village with 13 tepees, fire pits, and meat drying racks. The village is located on the Fort Niobrara National Wildlife Refuge overlooking the rugged Niobrara River Valley. Before the generators, vans full of actors, caterers, portable toilets, and other modern items arrive, it is easy to drift back in time and wonder what it was like to travel and camp on the plains in search of buffalo.

The refuge was chosen as a filming site because of the need for buffalo in many of the scenes. Cameraman Jim Underwood, with the help of refuge staff, was able to take pictures of buffalo running, rolling, fighting, and grazing. he made an extra trip to the

cont. on p. 18

Sam Marler, Public Affairs Officer



This village was recreated on the refuge to resemble an Omaha Indian village of the late nineteenth century for the movie "We Are One," a story about two Indian boys' first buffalo hunt.

In a scene from the television movie, "We Are One," Omaha Indians hunt buffalo on the Nebraska plains. The film, produced by Nebraska Educational Television, was shot at Fort Niobrara National Wildlife Refuge because of the need for buffalo in many of the scenes.

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refuge to photograph the herd running across the rolling sandhills.

A buffalo was also purchased from a local rancher and killed for use in the hunting scenes. The meat was carried into the village on horseback, butchered, and cooked over the open fire. The actors and production crew all sampled buffalo meat, most for the first time.

A night scene depicting a feast following a successful hunt was also made at the refuge. Many of the older Omaha Indians still know the traditional songs and dances of the tribe. Drummers and singers sat next to a campfire and were circled by the dancers, young men of the tribe. The women and children formed another circle on the outside. The drum beat and song carried out across the prairie night. For those of us watching, it was a trip to another time, another era.

The film "We Are One" will be released this fall. Nebraska's fourth grade students, for whom the movie was designed, will gain insight into this period of our history. The Indian actors, mostly Omahas, have had the unique opportunity of reenacting an important part of their tradition and heritage. The refuge staff was pleased to be a part of this important educational effort.

Bald Eagle On the Wing Again

Service employee Bob Leachman releases a juvenile bald eagle earlier this year after it was treated for lead poisoning. The eagle was found last December by a Colorado rancher and x-rays showed a single shot pellet in its stomach. Personnel at Colorado State University in Fort Collins treated the bird until its release near Loma, Colorado. Bald eagles do not develop the familiar white feathers on their heads until approximately 5 years old.

Alaska Professional Hunters Support Service Volunteers

George Sura, Public Affairs Officer

Phil Driver, president of Alaska Professional Hunters Association (left) presents Robert Gilmore, Regional Director, Alaska, with lapel pins to be worn by volunteers helping the Service.

Driver said his group recognizes the importance of the "Take Pride in America" campaign and the Service's volunteer programs. The group donated 500 pins to stimulate public awareness of these efforts and to provide recognition for the volunteers who participate in them.

"Volunteers have been cleaning up litter on refuges, assisting in transplanting caribou to the Kenai National Wildlife Refuge, writing conservation plans, collecting subsistence harvest data, performing stream surveys, patrolling back-country areas and a host of other tasks," Gilmore added.

Moving On with the Dogs

Jerry Stroebele
Selawik National Wildlife Refuge
Kotzebue, Alaska

Editor's Note:
In April of this year, biologist Jerry Stroebele left his job with Habitat Resources in Fairbanks to become the new manager of the Selawik refuge in Region 7. He chose to travel to his new duty station by dog sled. In this story he tells of the long, dramatic journey he made with Mary Leykom.

Fifteen months earlier at an office retreat I told the Fairbanks Ecological Services staff I was approaching 9 years on the job and it was time to be moving on. I had the best job in the Service but it was time to find another good one—not just any new assignment, but a whole new challenge.

Now it was early March and my career pattern of great assignments was continuing. On April 1, I would become manager of the Selawik National Wildlife Refuge, headquartered at Kotezebue, Alaska. I had worked before with Mike Spindler, the assistant refuge manager/pilot and looked forward to joining his professional team in rural Alaska.

Mary Leykom, my fiancée and a botanist with the Corps of Engineers, would move with me. Logistics almost overwhelmed us. We are both dog mushers and we had been planning a spring dog sled trip into the Brooks Range. Why not mush to Kotzebue?, we reasoned. Both my losing and gaining supervisors agreed to let me take a couple weeks of annual leave enroute to Kotzebue. The regional office authorized a permanent-change-of-station (PCS) move by dog team. Mary and I each had houses to sell; Mary's house was in Anchorage and mine in Fairbanks. We had long-tenured jobs to wrap up.

We both bought larger, stronger sleds. We bought three more dogs (bringing our total to 18), 360 booties for their feet, prescription veterinary medicine, and 1500 pounds of dog food, including dry meal, beef liver, ground turkey, turkey fat, bone meal, electrolytes, and fish oil.

We made new ganglines, tuglines, and necklines. Mary sewed a sled bag and my Fairbanks friends with the Service presented me with a custom-made sled bag. We spent hours on the phone, and poured over maps to determine the best route. The route we selected would take us through much of the Kanuti, Koyukuk, and Selawik National Wildlife Refuges. We sent dog food and food for ourselves off to seven villages along the route. Tony Booth of Ecological Services delivered 700 pounds in his private plane.

The first day was the worst. A fellow musher drove us 200 miles north of Fairbanks for our drop-off. There we left Alaska's road system for good.

A quarter mile from the truck, the dogs racing with pent up energy and excitement, we crossed fresh, slick overflow ice on the first of many river crossings. Shooting sideways on a curve like the crack of a whip, Mary's sled struck a stream boulder protruding through the ice and flipped over sled and rider.

Mary smashed her head on the ice but held on and didn't lose the team. Two hours later, Mary was seeing stars and fighting nausea, so we camped for the night. Our only other injuries in the next 600 miles were frostbite on our faces from the wind.

We traveled the snowmachine trails between villages. Proceeding down the Koyukuk River Valley, we passed through the Athabascan Indian villages of Bettles/Evansville, Alatna, Allakaket, Hughes, and Huslia. In Bettles my lead dog, Rocket, set a pattern he would follow-going in and out of every village leading the team full speed into every dog yard on the route.

We were impressed with the way the people in these villages love dogs and dog racing, and the tremendous hospitality they showed us. We had planned to camp during the entire trip in our unheated mountain tent. But we were often invited into peoples' homes or told to use their fish camps located along the river route.

Our entire 22-day trip coincided with unseasonable cold, clear, sunny and windy weather. Night temperatures were mostly between −20 degrees Fahrenheit and −38 degrees Fahrenheit. A few days saw +10 degrees Fahrenheit but most days the temperature didn't reach 0.

We ended up camping out about a third of the time but the rest of the trip we enjoyed the homes and camps of others, public shelter cabins, and the only two hotels along the route. Our main camping activity, besides rest, was eating, feeding dogs two or three times a day, and melting snow

cont. on p. 21

Mary Leykom

Jerry Stroebele on his recent permanent change of station (PCS) move by dog team. Items on his packing list included 360 booties for the dogs' feet and 1500 pounds of dog food. Stroebele is the new manager of Selawik National Wildlife Refuge in Kotzebue, Alaska.

Research and Acid Rain

Diana Cross
Office of Information Transfer
Fort Collins, Colorado

While others are learning more about what causes acid precipitation, and trying to find permanent solutions to the problem, the Service is concentrating on present conditions. Mitigation strategies to restore and protect lakes and streams altered by acidic deposition are being evaluated. These strategies will be a valuable tool for resource managers to use as an interim measure while long-term answers are sought. The object is to prevent further deterioration in high-value resources and sensitive systems.

As part of this effort, the Eastern Energy and Land Use Team is responsible for the design and implementation of a Federal Acid Precipitation Mitigation Program (APMP). This 5 year research effort will include evaluation of liming as a mitigative tool for rehabilitating damaged lakes and streams and for protecting sensitive systems from future acidification.

The APMP is being implemented primarily through Federal and state cooperative agreements, with supporting research involving private contractors, Federal laboratories, and cooperative fishery research units.

Although liming projects have been undertaken in eight states in the past 15 years, few, if any, of the state projects can be classified as research-oriented. Many of these projects involved no post-treatment monitoring and only superficial characterization of baseline conditions before treatment.

So how does the APMP differ from these past mitigation studies? First, it is a research program, focusing on the ecological effects of liming. To accomplish this, rigid criteria for site selection were established. Lakes and streams representing various geographic regions and hydrological conditions were selected for the program according to these criteria. All are currently being affected by acid deposition. Because the sites were selected for a research program addressing specific questions, criteria were somewhat more rigorous and exclusive than would be necessary for an operational project.

Secondly, standardized monitoring programs have been designed to detect changes in key hydrological, physical, chemical, and biological features within the treated systems. The monitoring will be implemented in three phases for lake projects: pre-treatment, transitional, and post-treatment. The pre-treatment phase will provide two annual cycles of data collection prior to liming. The transitional phase will last approximately one month, beginning with the liming operation and continuing until the lake chemistry has approached equilibrium. The post-treatment phase will involve at least 3 years of data collection.

For stream projects, the monitoring program will be implemented in two phases: pre-treatment and operational. The pre-treatment phase will require two annual cycles of data collection prior to liming. Operational phase monitoring will begin concurrently with the initiation of stream dosing and continue for approximately 3 years.

Finally, treatment methods have been standardized. Previously tested materials and application methods will be used. For example, direct water column liming will be used in lakes, because this technique allows an accurate determination of the dose. For streams, the most successful mechanical dosing devices, such as slurry dosers and rotary drums, will be used.

Because of the involvement of several research agencies and multiple project sites, careful attention must be given to the specification of sampling and analytical protocols, data management, and quality control procedures to ensure that results of the APMP projects are accurate and comparable. To this end, the Eastern Energy and Land Use Team has developed a two-volume guidance manual to assistd researchers and the state and Federal administrators responsible for the planning, implementation, and analysis of APMP projects.

Volume I addresses the initial project planning, field and laboratory activities, and data handling procedures. Volume II describes materials and methods used to mitigate acid lakes and streams, and summarizes important technical aspects of those techniques that may be used in this research program.

Thus far in the program, research sites have been selected, cooperative agreements have been signed between the Service and participating states, the guidance manual has been issued, and the States have begun pre-treatment monitoring.

Service mitigation research, standardized and adhering to strict scientific standards, will answer many questions about the effects of liming on acid-stressed aquatic systems. Acid Precipitation Mitigation Program findings will provide managers with information they can use now, while larger questions on acidic deposition and its effects are still being explored.

For further information, on the APMP or other acid rain research programs, please call Dr. R. Kent Schreiber, Eastern Energy and Land Use Team, at FTS 925-5354.

For more information about these and other subjects, contact Diana Cross at Research's Office of Information Transfer in Ft. Collins, Colorado, at FTS (303) 493-8401.

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for dog water. We only saw open water twice during the trip.

Midway in our journey we found comfort at hot springs near the headwaters of the Selawik River—just inside the scenic eastern boundary of the 2.1-million-acre Selawik refuge. After two great soaks in the hot springs (hot!) it took 10 more days down the Kobuk River Valley to reach the refuge headquarters in Kotzebue.

For dogs and mushers from Interior Alaska, the wind-packed (sastrugi) snow and obliterated trails were a new challenge. We passed through the Inupiat Eskimo villages of Shungnak, Ambler, Kiana, and Noorvik. By now we were pleasantly accustomed to the hospitality of the people and the rigors of the trail.

Five days out of Kotzebue, on an aurora-lit night with the temperature 24 degrees below zero, my co-lead dog, Baby, bore two pups. The rest of the trip we took it easy. The pups traveled in the sled wrapped together with a hot water bottle in our sleeping skins. Baby nursed them every two hours in the lee of the sled, protected from the unrelenting arctic coastal wind.

Our trip took us through beautiful rigorous snowscapes and we followed fresh wolf tracks for hundreds of miles. Our journey brought us into Native villages whose people respected outsiders who traveled by traditional means.

As manager of the Selawik Refuge I now have a new challenge with an assignment in rural Alaska. Here I will live and work and hopefully develop an understanding of the people and resource problems. Mushing to Kotzebue was the real way to travel. It was great.

LETTERS TO THE EDITOR

Editor's Note: Fish and Wildlife News recently received a copy of the following letter from the National Wildlife Refuge Association to Interior Secretary Don Hodel

Dear Mr. Hodel:

We are pleased to have been invited to attend the meeting which you and Under Secretary McLaughlin held on February 27 to discuss, among other things, your "Take Pride in America: This Land is Your Land" campaign.

We witnessed a further discussion of this at the recent North American Wildlife and Natural Resources Conference in Reno, Nevada, and have read more about the program in the most recent issue of *Fish and Wildlife News*.

We commend you for initiating this National public awareness program. We have already seen examples of a positive response to your initiative and you may be assured that the National Wildlife Refuge Association will be lending its continued support in seeing that America's public lands, particularly its National Wildlife Refuges, are understood, cherished and wisely used.

Sincerely,

Forrest A. Carpenter
President
National Wildlife
Refuge Association

Dear Editor:

Congratulations to *Fish and Wildlife News* on a very fine summer issue featuring International Affairs. The International Affairs staff and other Service specialists provided informative, interesting articles on the program's goals and functions.

I am just down the corridor from and work periodically with that office on refuge projects, but my eyes were further opened to its global conservation activities. From the Service reorganization to the North American Waterfowl Plan to Far-Eastern wildlife research, this issue sure brought home the news.

Continuing fine articles on Service programs and people make the *News* our best communication vehicle. I particularly appreciate the refuge, hatchery, and research station highlights/updates. The articles ranging from daily field staff contributions to long-term international projects provides both deserved recognition and an important information source for the conservation community. Keep up the great work!

Frank Cockrell
Division of Refuges

Dear Editor:

Congratulations on the excellent special report covering publications and communications in the April/May issue of "Fish and Wildlife News."

The first contact that the general public and agency personnel often have with the Service is when seeking publications. It is sometime their only contact with the Service. Your issue will help improve the delivery of publications to users.

There was one source of Fish and Wildlife Service publications which was not mentioned, namely, libraries. All land grant colleges and universities and many large public libraries are designated as depository libraries by the Government Printing Office (GPO). GPO provides depositories with GPO publications free of charge on a continuing basis. In return, depository libraries agree to house (permanently), organize, and make the publications available to the general public. There are two kinds of depositories: "Full" depositories, receive all publications published by the U.S. Government, and there is at least one library so designated in each major geographical region of the United States. In addition, there are many more "Partial" depository libraries; these are allowed to select which publications they want to receive based on their patrons' needs

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and the resources available to house, catalog, and service the collection. Users can learn where depositories are located by asking any local library or the state library.

A complete list of depository libraries is published as "The Federal Depository Library Program," 1983, 27p. The list includes addresses, telephone numbers, and date of designation of depository libraries. The publication can be obtained from:

Jan Erickson, Library Marketing Specialist
Superintendent of Documents
U.S. Government Printing Office, Stop SM
Washington, D.C. 20401
Phone number: 202-275-3635

Users should be aware that in most large libraries and some smaller ones, no Federal documents are listed in the main card catalog or online catalog. The documents are usually housed in a separate documents department with specialized indexes and a staff trained to assist users in finding Government documents. These departments also usually purchase and service National Technical Information Service (NTIS) documents and other Federal documents not published by the GPO.

Sincerely,

Kay Lindgren
Librarian
National Ecology Center
Ft. Collins, Colorado

Dear Editor:

The Federal employee has been awash in a sea of negativism for a decade or more. Nasty words about waste, fraud, and abuse come from all directions. Consequently, we become very defensive. We may even believe some of this garbage "about ourselves." We forget how well the Service performs, especially at our field levels. We tend to overlook the great many accomplishments made by Service people day after day. Others don't.

Our problem is we fail to see how well the U.S. Fish and Wildlife Service is perceived by many, many people. This message came to me from a brief, simple encounter a short time ago. You, too, may get some pleasure from it.

I had the opportunity this past fall to talk to well over a thousand people at the dedication ceremony for the Wells National Estuarine Sanctuary at Wells, Maine. The Sanctuary overlaps a part of our Rachel Carson National Wildlife Refuge.

My remarks focused on mutual cooperation and the understanding and preservation of important natural wetland areas. On one of my visits to the Refuge, I happened to meet a niece of Aldo Leopold, so I expanded my remarks to cite the many things these two exceptional people, well known in Maine, had in common: both were scientists, both philosophers, both successful authors, both ahead of their time, and BOTH FEDERAL BUREAUCRATS for much of their working careers (he in the Forest Service and she in the Fish and Wildlife Service).

The remarks of all the speakers, including mine, were well-received. Later, quite a few people came to talk to me but the most memorable conversation involved a very knowledgeable man in his mid-30's and his daughter of about 10. He was writing a book about the century's great conservationists, including Rachel Carson and Aldo Leopold. In the course of his work, he had visited a number of our field stations and was very impressed by the competence, dedication, and caliber of our Service people.

He must have been, for near the end of our conversation, he turned to his daughter and said, "Rebecca, this is Mr. Ashe. He works for the U.S. Fish and Wildlife Service, just as Rachel Carson did. They are a super organization and do a lot of good things, You might think about working for them some day."

Now, no father would say such things to his daughter if he did not believe them. And there were thousands at Wells that day who felt the same way—and many millions around the country. I meet them all the time.

That conversation made my day. I thought sharing it with those who earned it might make theirs, too.

Bill Ashe
Deputy Regional Director
Region 5

Unnecessary Paperwork: A Perpetual Battle

Ideas and directives on paper are the fibre of government. Paperwork is essential. But unnecessary paperwork is the bane of the bureaucrat and the taxpayer. A major problem in the reduction of paperwork is that its degree of necessity is like beauty—in the eye of the beholder.

Designated personnel at field stations, regional offices, and Washington have been most responsive to Director Frank Dunkle's call for suggestions to reduce the burden of internal management procedures and paperwork. Serveral, in their reports, noted that management procedures and paperwork requirements were streamlined effectively to some extent by the Service's redirection from program management to the line/staff operation.

A Regional Director put it this way: "The major improvement noted has evolved from the strong emphasis on line management. This has reduced considerable paperwork in the form of program advice amendments and other programmatic paperwork. Thing such as requests for organizational changes and personnel actions no longer go through the maze of reviews and approvals which the program mangement system required."

Deputy Director Gene Hester noted that recent paperwork reductions included "evaluation reports for Washington and regional evaluations, program advices and program advice amendments from Washington to the regions, and justifications for attendance at regional meetings."

Another Region reported that the vacancy announcement process was reduced "by putting all vacancies on one sheet—we formerly had from 25 to 40 pages. This resulted in a savings of at least $10,000 annually." The Region's report added that "Pre-Project Approval" forms were discontinued. Staff time alone saved in this Region is estimated at $12,000 annually. The approval process alone shortened from up to four months to a matter of a few days.

"Our internal process of preparing the annual work advices has been streamlined and the paperwork reduced by about 90 per cent—an

estimated annual saving of $8,000 in printing and reproduction."

An Assistant Director pointed reduction of "paperwork associated with Washington approval of GS-13 hires in Regional Offices and field stations."

Another Regional Director said reductions that have been achieved and should continue include "generally less requests for information from Washington, monthly certification to the Assistant Director-Administration that Financial Records have been reconciled, and Annual Wildlife Assistance Report."

Another Assistant Director had a list of accomplishments this year, as follows:

—preparation of the six-year land acquisition schedule has been dropped. We are now using the LAPS system to obtain the necessary information;

—Regions no longer are required to send in land protection plans;

—software has been developed and distributed to all Regions for tracking compliance with minimum public use standards on refuges;

—the quarterly construction report no longer is required;

—the professional services report is no longer required;

—software is being developed to automate refuge output reports;

—the issuance of banding permits and color marking authorizations has been computerized. A list of authorizations is sent out periodically rather than individual authorizations for each participant;

—the band issue management system is being computerized to reduce the number of forms sent to participants in the banding scheme;

—there has been a significant increase in the electronic transmission of correspondence to the Regions;

A Regional Director concluded that the elimination of regional program evaluations had saved an estimated 6 work months of effort in his Region alone and that time and effort "can now be made available to accomplish the work of the Service."

Still another Region reported these improvements:

—elimination of quarterly reduction-in-force and grade bulge reports from the Regions;

—delegation of travel advance approval;

—use of categorical exclusions as opposed to preparation of environmental assessments and impact statements;

—significantly fewer telephoned and written requests from Washington since reorganization.

Obviously, there are paperwork requirements over which the Fish and Wildlife Service has no control. Many are dictated by Congress—some by the Office of Management and Budget, and some by Department of the Interior needs. Such areas usually relate to contracting, personnel, safety and security, finance, construction, equal employment opportunity, and information systems and other areas of like nature.

The prime thing to remember in the war against unnecessary paperwork is that it is a perpetual battle. As some particular phase of a paperwork requirement becomes obsolete, and is identified as obsolete, and is eliminated—another may spring up to fill the vacuum as a response to newly enacted legislation.

Any employee's ideas about reduction of paperwork and internal management procedures are worthy of consideration by the supervisor. If the idea is not feasible, the supervisor should explain to the employee why it is not.

If the idea has merit and brings results, it should be given wide distribution to insure that every organizational entity within the Service has the opportunity to adopt it.

A positive attitude of all Service staff will help immeasurably in the continuing battle against useless and unnecessary paper work.

Noted Service Employee Dies

Robert M. Rutherford, former chief of the Divisions of Federal Aid and Technical Services in the Service and the Bureau of Sport Fisheries and Wildlife, died July 12 at his home in Washington after a stroke.

"Bob" as he was known to his friends and associates across the country, was a native of Alameda, California, and a forestry graduate of the University of California at Berkeley. He joined the old Bureau of Biological Survey in 1926 in the Lands Division in Minneapolis. In 1930 he moved to Washington and succeeded Albert M. Day as chief of Federal Aid in 1946 when Day became the Director of what was by then the Fish and Wildlife Service. With the reorganization of 1957 he was named chief of the Division of Technical Services, overseeing the Realty, Engineering, River Basins, and Federal Aid programs. Upon retirement in 1960 he received the Department's Distinguished Service Award.

As chief of the Federal Aid Division, Rutherford became well acquainted with conservation leaders and state wildlife officials. He was respected for his high professional standards and defense of professionalism at a time when partisan interests were often the basis for appointments and advancement in the states. Possessed of a great fund of stories and a congenial good humor, he was well liked by associates across the country.

He is survived by his wife, Rose, and a sister Gertrude Johnson, of Chico, California.

States Receive $188 Million in Federal Aid

Over $188 million will go to various states, commonwealths, and territories to assist their fish and wildlife restoration programs as a preliminary apportionment of Federal Aid funds.

The funds came primarily from excise taxes on sporting equipment bought by hunters and anglers and are a result of two pieces of legislation, the Federal Aid in Sport Fish Restoration (Dingell-Johnson) Act and the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act. This year's preliminary apportionment figure also includes money withheld last year under the Gramm-Rudman-Hollings Act.

The Dingell-Johnson program will receive $110,400,000—the highest preliminary apportionment for fish restoration on record. This money comes from an excise tax on fishing equipment such as rods, reels, creels, and artificial baits, lures, and flies. The funding virtually tripled since 1984 when a share of motorboat fuel taxes and an added tax on certain types of previously untaxed fishing equipment, such as tackle boxes, were added under the Wallop-Breaux amendment. In addition, the import duties on pleasure boats and fishing equipment were deposited in the Wallop-Breaux Trust Fund.

As a result, state wildlife agencies received significant increases in money to spend on fish restoration projects last year. States retain authority to determine how to spend this extra money based on their needs and certain conditions in the amendment. Many states have allocated money to conduct fishery surveys in order to set priorities for further fish restoration projects. Others are emphasizing construction or improvement of boat ramps and associated facilities, including handicapped access facilities, enlarging or improving lakes to provide more recreational fishing and fish habitat, and developing aquatic education classes designed to reduce fishing- and boating-related accidents. Increased fishery research activities and development of public fishing areas in urban settings are also planned by some states.

Elizabeth Lipscomb
Current Information

Newsletter Wins National Award

The Fish and Wildlife Service has won its first top-place award in the Association for Conservation Information's national communications award program, for the special "Fisheries" edition of *Fish and Wildlife News* that appeared in April 1985.

The special newsletter edition scored 193 points out of a possible 200 and took first place in the program's "internal communications" category, besting submissions from seven other state conservation agencies. Runners-up included the Missouri Department of Conservation, which took second place for its "Conservation Currents" publication, and the Colorado Division of Wildlife, whose "Connections" won third place.

This is the first time that a Fish and Wildlife Service publication has captured first-place in the prestigious national awards competition, which has traditionally been dominated by the well-known publications and other educational materials produced by many of the State and Provincial fish and game agencies.

The 40-page issue was completely devoted to the Fish and Wildlife Service's fisheries program, its history, and future direction. Included in the issues were articles on the National Fish Hatchery System, ongoing fishery research activities, and fishery management programs on National Wildlife Refuges. Most of the articles were written by individual Service field employees themselves.

"This recognition is as much a tribute to the program and its dedicated employees as it is to the Fish and Wildlife Service's Public Affairs Office," says Michael L. Smith, deputy chief of public affairs, who served as executive editor for the special edition. "We're pleased to share it with all of the employees who helped us in completing this effort."

The Association for Conservation Information was founded in 1938 and designed to foster better communication and conservation education efforts by natural resource management agencies.

FISH AND WILDLIFE NEWS

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Megan Durham, Chief, Current Information
Craig I. Rieben, Editor, *Fish and Wildlife News*
Elizabeth Lipscomb, Editorial Assistant
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DEPOSITORY 376

A trio of redheads swinging low over a backwater marsh captured this year's Duck Stamp design competition and will be featured on the 1987-88 Migratory Bird Hunting and Conservation Stamp. The painting was done by Arthur G. Anderson, 50, of Wisconsin.

Wisconsin Artist Wins Duck Stamp Contest With Redheads

After five entries in the annual Federal Duck Stamp Contest, Wisconsin artist Arthur G. Anderson prevailed over 798 contenders to take first place in this year's edition of the prestigious waterfowl art competition with his painting of three redheads flying low over a backwater marsh.

"This is great, just great!," said Anderson when reached by telephone at his home in Onalaska, Wisconsin. "I was painting a bald eagle when the phone rang and I was so engrossed in my work I had almost forgotten about the contest."

Anderson's redheads will appear on the 1987-88 Migratory Bird Hunting and Conservation Stamp, commonly known as the Federal Duck Stamp.

In announcing the winner as judging concluded in Washington, DC, on November 5, 1986, U.S. Fish and Wildlife Service Director Frank Dunkle referred to the Duck Stamp as the backbone of the agency's wetlands conservation effort. "The dollars spent on Duck Stamps by hunters and non-hunting conservationists work to ensure the future of this Nation's waterfowl populations," Dunkle said.

To date, 90 million Duck Stamps have been sold, providing more than $300 million for the purchase of more than 3.5 million acres of prime wetland habitat for waterfowl.

Anderson, 50, who "hunts mostly with a camera," moved his family to Onalaska, Wisconsin, which

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Editor's Note:

Again, the press of business, special editions, and a temporary loss of staff in Public Affairs led to this edition of Fish and Wildlife News being out late. We are in the process of trying to get caught up and appreciate your understanding.

Oil Spill Hits Savannah NWR

Don Pfitzer
Public Affairs Officer
Region 4

On Thursday morning, December 4, 1986, the Liberian-registered tanker, Amazon Venture, entered the Savannah River and by mid-day was tied up at Georgia Port Authority's Garden City Terminal. It began off-loading #6 crude oil to the Belcher Co. of Georgia. At near midnight, the U.S. Coast Guard Marine Safety Office received a report that oil was leaking from the tanker.

By Friday morning, the first estimate placed the spill at about 2,000 gallons and clean-up was begun by the Coast Guard. By afternoon, traces of oil were beginning to show up at Savannah National Wildlife Refuge, which includes the upper reaches of the Savannah River delta tributaries before the river reaches the Atlantic Ocean. On Saturday, the strike team arrived and began coordinating the clean-up. By now, the estimate of the spill had escalated to 11,000 gallons. On Sunday, when a Coast Guard diver barely escaped injury after being inundated by heated oil, it was finally discovered that a faulty valve on board the ship was the cause of the leak. By this time, the Coast Guard had revised its estimate to 50,000 gallons of oil in the river.

The Savannah River has a very strong tide with a range of about 6-10 feet. Savannah National Wildlife Refuge (NWR) encompasses about 10,000 acres of tidal area, including tidal marsh, and about 50 miles of river and tributaries of the Savannah River. All this area was subject to the effects of the spill. Savannah NWR hosts a waterfowl hunt that begins with the State season. This was to open on the following Saturday. Because the booms and absorbant mats that were being used to contain as much of the oil as possible were

cont. on p. 2

I 49.88:

The Liberian tanker Amazon Venture spilled 500,000 gallons of fuel oil into the Savannah River before it departed for Jacksonville, Florida where continued leaking was reported.

Booms deployed to block the flow of oil into refuge waters broke continually under the force of a seven knot river current.

photos by Jonas Jordan, U.S. Army Corps of Engineers

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strung out across the river, and because the only access to the waterfowl hunting areas was by boat through many miles of the river, the waterfowl hunt had to be postponed until the clean-up was completed. Announcements were made to the news media that the waterfowl hunts would not begin until the oil clean-up and salvage operation were completed.

The refuge staff and others soon realized that there was much more oil in the river than the estimated 50,000 gallons. Georgia Department of Natural Resources, South Carolina Wildlife and Marine Resources Commission, the Environmental Protection Agency, and the Coast Guard all had response teams on location and were making every effort to assess the effects of the spill. By Monday, December 10, the captain of the Amazon Venture was preparing to leave the Savannah port. The waterfront business filed a $1 million damage claim in federal court against the tanker and federal marshals seized the vessel on orders from the federal judge. The next day, the State of Georgia filed a $2 million claim for environmental damages.

The Coast Guard reevaluated the size of the spill and upped the estimate to 500,000 gallons. (A spill of 100,000 gallons is considered a major spill.) At this time, the underwriters for the Calluna Maritime Corporation, owners of the tanker, posted a $5.2 million bond to cover the damages caused by the oil spill. The federal judge released the ship and it sailed for Jacksonville, Florida. It arrived there on December 17, still leaking oil. The Coast Guard encircled it with an oil retaining boom. By the next day, the leak was described as minor, with only 100 gallons having leaked. However, orders were given to the captain that if repairs were not made, the ship would be refused entry into any other U.S. port.

After a visit to the area, U.S. Congressman Lindsay Thomas of Georgia announced that the House Committee on Merchant Marine and Fisheries, of which he is a member, plans to hold hearings next year to evaluate the environmental damage caused by the spill. Georgia DNR Commissioner Leonard Ledbetter; Executive Director of the South Carolina Wildlife Resources Department Dr. James Timmerman; Regional Director of the Service, Associate Regional Director of the National Park Service, and the Regional Solicitor met on December 19 to discuss the possibility of a joint damage assessment on the effects of the spill.

The small number of oiled birds—a few cormorants, anhingas, and a duck or two—is in no way indicative of the environmental damage caused by the oil. Many questions on this largest oil spill in Georgia history are still unanswered, not the least of which are the unknown properties of the #6 crude and how it reacts in the environment. It will be months and maybe a year or more before the final effects are known and the legal actions are completed. As Savannah Coastal Refuges Manager John Davis said, "It's a mess. It's the worst spill in my 13 years experience here."

Duck Stamp cont. from p.1

overlooks the Mississippi River near the town of La Crosse, in order to be close to the marsh habitat frequented by the redheads, canvasbacks, and other waterfowl during their annual migrations. In addition to waterfowl, Anderson likes to paint bald eagles, white-tailed deer, and other species.

Born in Eau Claire, Wisconsin, Anderson began painting at the age of 12 with a set of oils borrowed from his uncle. He studied art at the University of Wisconsin at Eau Claire and at the Art Instruction School in St. Paul, Minnesota.

He says his winning design was inspired by his wife, Virginia. "She's a redhead," he quipped, "and I told her that I'd enter redheads until I won." The painting features three redheads flying low over water in late afternoon. A typical backwater river marsh habitat is depicted—a scene which Anderson chose because "just about anyone in the country would be able to identify with it."

Second place in the Duck Stamp contest was won by Lynn R. Kaatz of Grafton, Ohio, with an acrylic rendition of two Canada geese in flight. Ronald Louque of Orange, Virginia, who was in the Interior Department audience during the contest, placed third with an acrylic depicting a pair of snow geese in flight over water.

As part of this year's Duck Stamp ceremonies, a sealed-bid auction to ten sheets of Golden Anniversary commemorative 1984-85 Duck Stamps raised over $65,500 for the Migratory Bird Conservation Fund.

President Reagan, Secretary Hodel Hail Art Gift to Foundation

Interior Secretary Don Hodel recently joined President Reagan in praising noted Canadian wildlife artist Robert Bateman for providing a print to the National Fish and Wildlife Foundation for a wildlife print and stamp campaign next year to benefit conservation projects.

Bateman and Foundation Board Chairman Thomas G. McMillan presented the first print of the painting, "Pride of Autumn," to President Reagan during a White House ceremony November 20, 1986. The painting portrays a Canada goose standing in a classic pose at water's edge.

"Robert Bateman's new painting is a beautiful addition to the world of wildlife art," Secretary Hodel said. "By providing the print to the Foundation, Robert Bateman demonstrates once again the depth of his commitment to the wild things of this planet that his art celebrates so eloquently. Those who buy this print from the Foundation will experience two-fold pleasure in knowing they possess a beautiful work of art and that their purchase will help fund important wildlife conservation projects."

The National Fish and Wildlife Foundation was established by Congress in 1984 and President Reagan signed it into law that same year. It is an independent, private conservation organization established to protect and enhance the Nation's wildlife, fish, and plant resources by working in association with the U.S. Fish and Wildlife Service, state wildlife agencies, and private conservation groups.

For more information on the National Fish and Wildlife Foundation's limited-edition print and stamp program, contact Charles H. Collins, Executive Director, National Fish and Wildlife Foundation, 18th & C Streets NW, Rm. 2626, Washington, DC, 20240 or call (202) 343-1040.

Pete Souza, White House Photo

President Reagan views the original painting, "Pride of Autumn," with (left to right) Thomas G. McMillan, Chairman of the Board of the National Fish and Wildlife Foundation; artist Robert Bateman; and Mrs. T. Boone Pickens, Foundation Board member. The President was presented with Print No. 1 from the painting on November 20, 1986.

Bateman, a world-renowned artist and conservationist, presented prints from "Pride of Autumn" to the National Fish and Wildlife Foundation. Beginning February 10, 1987, they will be sold through art dealers in the U.S. and Canada as the Foundation's first conservation print series to generate funds for the Foundation's conservation programs.

Sam Marler

Marler Named Assistant Director for External Affairs

Service Director Frank Dunkle recently announced the appointment of Joseph S. (Sam) Marler, 52, a resident of Golden, Colorado, as Assistant Director for External Affairs.

Marler will be responsible for coordinating the Service's communications with the U.S. Congress, state wildlife agencies, the public, and other nations. He will supervise the activities of the agency's Legislative Services, Public Affairs, and International Affairs offices in the Service's Washington, D.C., headquarters.

"I am greatly interested in improving communications with our various publics and as a result, I regard the Assistant Director for External Affairs as a key position in this agency," Dunkle said. "I feel most fortunate to have a man of Sam Marler's wide experience and ability in that post. He has worked for many years on Capitol Hill and has been the director of public affairs for the entire Department of the Interior. He has also worked as a regional public affairs officer for Region 6 in Denver.

Marler has most recently served the Service as acting chief of its office of legislative services and, from 1977 to 1986, as assistant regional director for public affairs for the Rocky Mountain region.

Between 1968 and 1975, Marler was legislative assistant and press secretary to Wyoming Senator Clifford Hansen, where his responsibilities included developing legislative policy on foreign relations

cont. on p. 5

Seminar Focuses on Illegal Wildlife Trade

Nancy Roeper
Law Enforcement
Washington Office

The worldwide demand for pets and animal products makes international wildlife smuggling a profitable business. In order to combat this illegal wildlife trade, 23 nations participated in a Convention for International Trade in Endangered Species (CITES) law enforcement seminar hosted by the British government in Bristol, United Kingdom, this past September.

Two representatives from the Division of Law Enforcement, Clark R. Bavin and Nancy J. Roeper, and one from the Federal Wildlife Permit Office, Susan Lawrence, attended the seminar to discuss mutual problems and potential solutions to the growing illegal wildlife trade problem. Part of the U.S. delegation's presentation was a video tape produced by the Division of Law Enforcement that depicted methods commonly used to import wildlife illegally into the United States.

Other countries offered presentations on specimen identification, international communication barriers, and methods of permit fraud, as well as on problems unique to the trade in parrots, ivory, and plants. For example, orchids and other plants, particularly when shipped in a dormant stage, can be difficult to identify. Lanner falcon eggs have been transported using a customized T-shirt with little pockets created for the eggs, which enable the smuggler to keep the eggs warm against his body.

A cockatoo was once smuggled into the U.S. inside a radio from which the internal electronics had been removed. Permits to export animals legally are often fabricated and sometimes stolen outright.

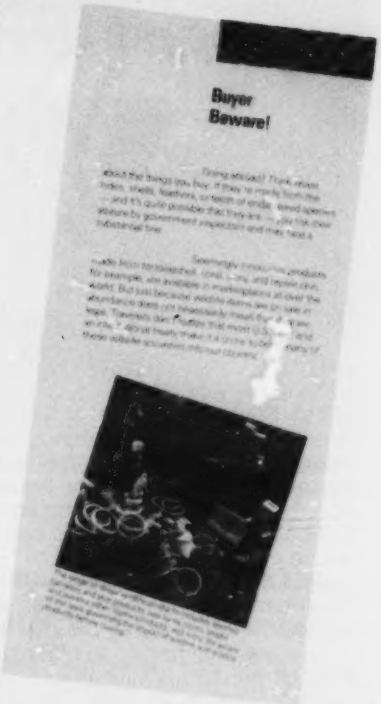
The U.S. is fortunate to have a law enforcement division within the Service to focus exclusively on wildlife laws. A major arm of the division is comprised of 56 wildlife inspectors stationed at major ports of entry. These inspectors have been specially trained to detect illegal wildlife shipments. Most other countries must rely solely on their Customs officers to enforce wildlife trade laws, who, like U.S. Customs agents, must administer laws regulating a wide range of items, such as drugs and high technology equipment, in addition to wildlife.

Some of the key problems that hinder effective enforcement of CITES regulations on a worldwide basis include inadequate legislation, poor international exchange of information, and inadequate training of enforcement officers. The CITES party states and the CITES Secretariat agreed to try to establish an international communication network to trade information on convicted smugglers and to cooperate in providing additional training materials and conducting further seminars.

It will take these steps, and many others recommended as a result of the seminar, to guarantee the survival of those species threatened by overexploitation.

Nancy Roeper

A hollowed radio/tape player is a common method used by smugglers to import wildlife illegally into the U.S.



New Brochure Warns "Know Before You Go"

When it comes to buying wildlife products, it's a jungle out there! And though exotic animals and plants appear enticing in foreign market places, the prospective buyer is entering a realm where the laws are complicated and the pitfalls are considerable.

It's a world where, in most cases, you're on your own!

Each year, more than 10 million Americans travel abroad, many of them to regions of the globe that support a flourishing trade in exotic birds and animals, fashionable jewelry and furs, and unique tropical plants. American globetrotters spend an estimated $14 billion while traveling, much of it for souvenirs, curios, and other collectibles commonly fashioned from foreign wildlife and plants.

While some of these products are legal to import into the United States, many others run afoul of Federal and international laws protecting animals and plants that are facing extinction. Often what begins as an enjoyable vacation ends with a bitter lesson as these "illegal aliens" are con-

fiscated, leaving the traveler with nothing more than a depleted bankroll and a receipt for seized property.

"The old adage, 'Let the buyer beware,' has never been more appropriate to a situation than it is to wildlife trade," says Director Frank Dunkle. "People who have, in many cases, innocently thought their wildlife purchases abroad were legal have learned the hard way that it's best to 'know before you go.' "

Now the Service, in cooperation with the Fish and Wildlife Foundation and World Wildlife Fund—U.S., has developed a new brochure alerting travelers to the pitfalls of buying wildlife products abroad. "Buyer Beware!" describes the animal and plant products that are most commonly sold in foreign countries and whose importation into the United States is illegal. It also explains the Federal and international law and treaties under which the Service seeks to stem the growing trade in illegal products and to promote the conservation of the world's endangered wildlife.

Because of the complexity of regulations governing wildlife importations, "Buyer Beware!" advises travelers with specific questions about certain countries they will be visiting, or products, to contact the Service or the World Wildlife Fund well in advance of their trip to obtain more detailed information.

—David Klinger

Marler cont. from p. 3

and national defense issues. Marler served as president of the Senate Press Secretaries Association in 1973 and was a staff member of the Senate Steering Committee.

In 1975, Marler became press secretary to Secretary of the Interior Stanley Hathaway. Upon Hathaway's resignation that year, Marler continued to serve as the Department's deputy director of public affairs. In 1976, he returned to Denver to become the Interior Secretary's western regional public affairs director.

Marler's earlier job experience includes 7 years as United Press International's regional bureau director for Colorado, Wyoming, and New Mexico. He served in the U.S. Marine Corps from 1957 to 1961 and reached the rank of major. Marler graduated from Louisiana State University in 1957 with a bachelor of arts in journalism.

China and U.S. to Cooperate in Conservation

Steve Stewart

The Protocol on the Conservation of Nature was signed in Washington, D.C., November 19 by Under Secretary of the Interior Ann McLaughlin and Vice Minister of Forestry for the People's Republic of China (PRC) Liu Guangyun. Standing, from left are Steve Kohl, Office of International Affairs; Keith Eastin, Deputy Under Secretary of the Interior; Han Xu, PRC Ambassador to the United States; and Yuan Haiying, U.S. Program Coordinator.

Elizabeth Lipscomb
Office of Current Information
Washington, DC

The People's Republic of China and the United States began cooperative efforts in wildlife management and natural resource conservation under a special protocol signed in Washington, D.C., Nov. 19 by Ann McLaughlin, Under Secretary for the U.S. Department of the Interior, and Liu Guangyun, Vice Minister for the Republic's Ministry of Forestry.

"Advances made possible under this Protocol on the Conservation of Nature not only will further the growing ties between the United States and the People's Republic of China, but also will offer tremendous potential for promoting the cause of global conservation," said Under Secretary McLaughlin during the signing ceremony.

The document, the 28th protocol under an Agreement on Cooperation in Science and Technology signed by representatives of the two countries in January 1979, outlines five broadly-defined categories under which activities may be carried out. These are: 1) protected natural areas, 2) rare and endangered species, 3) migratory birds, 4) conservation research and wildlife habitat management, and 5) other mutually agreed-upon cooperative research activities.

The Cooperation in Science and Technology pact is a bilateral agreement which serves as an umbrella for various protocols signed between U.S. Government agencies and their Chinese counterparts. The protocol signed today is the first of the 28 protocols to involve wildlife biology.

The protocol will be administered in the United States by two Department of the Interior agencies—the U.S. Fish and Wildlife Service and the National Park Service—and in the People's Republic of China by the Ministry of Forestry. Private organizations, businesses, academic institutions, and other government agencies from both countries also will be able to participate under the auspices of the protocol, which is subject to renewal every 5 years.

The protocol will advance the interests and responsibilities of both nations under the World Heritage Convention. Under Public Law 96-515, the Secretary of the Interior is responsible for directing and coordinating U.S. activities carried out under this treaty which recognizes and protects unique cultural and natural properties worldwide. The treaty requires cooperation between and among member nations.

The People's Republic of China is also a member of the United Nation's "Man and the Biosphere" program and has set aside several natural areas as part of that program's "biosphere reserve system."

Innovative Interpretation at San Francisco Bay

John Steiner
Park Ranger
San Francisco Bay NWR

Bill Meyer, Public Affairs Officer

San Francisco Bay is many things—the largest bay on the west coast of North America, a port of call for world commerce, a major metropolitan area with 5 million residents, and the site of one of the largest urban wildlife refuges in the world. Consequently, the interpretive staff at San Francisco Bay National Wildlife Refuge faces a challenge unusual for a wildlife refuge.

Visitors to most refuges go there because they already appreciate the beauty of nature and want a chance to further experience it. In the San Francisco area there is a wide range of awareness levels. A large segment of society is completely unaware of the value of the bay to migratory birds and other wildlife, and another segment fights to preserve remaining bay wildlife habitats.

In spite of the efforts made by refuge staff to contact the public and interpret natural history, there are thousands of people whose interests do not include endangered species, wetlands preservation, or waterfowl populations. Many bay area residents do not really care about salt marshes, and lots of them do not even know that the wildlife refuge exists. Reaching *these* people is one of the most challenging tasks for the interpretive staff. The first step in reaching them is getting them out to the refuge where they can see with their own eyes what sort of job we are doing.

This fall, the refuge held some nontraditional activities aimed at attracting new visitors. In October, we hosted a sale of native plants which brought 400 horticultural enthusiasts to the refuge, many for the first time. The plants were provided by the California Native Plant Society, and a day-long series of workshops and programs were presented by various horticultural and conservation organizations. Participants in these sessions learned about the advantages of planting with natives, revegetation with native plants, water conservation, and so on. There were also exhibits by The Nature Conservancy, the local municipal water district (which distributed literature concerning its xeric landscaping program), several native plant seed companies, the Native Plant Society, a commercial nursery specializing in native plants, and the wildlife refuge volunteers with an exhibit on habitat preservation and enhancement.

Though the visitors to the refuge on

Wildlife Society Honors Dick Rogers

Jack Helvie and Forrest Cameron
Wildlife Resources
Portland Regional Office

Director of the Refuge Management Training Academy Richard S. Rodgers recently received the 1986 Oregon Wildlife Achievement Award from the Oregon Chapter of the Wildlife Society (TWS). The presentation was made in April by TWS Field Representative Tom Franklin during the advanced session of the Refuge Management Training Academy in Washington, D.C. The inscription on the plaque reads "*In recognition of his dedicated service and professional ideals exhibited as a refuge manager in the National Wildlife Refuge System and as Director of the Refuge Management Training Academy.*"

Dick began his wildlife career in 1952 as a member of a range survey team at C.M. Russell Game Range in Montana and then became Assistant Manager of Red Rock Lakes National Wildlife Refuge in Montana. He subsequently served as Refuge Manager at Crescent Lake NWR, Nebraska; Arrowwood NWR, North Dakota; and William L. Finley NWR Complex, Orgeon, before accepting a Wildlife Resources staff position in the Portland Regional Office in 1977. In 1981, Dick served temporarily as Refuge Manager at the Sacramento NWR Complex in California. He became National Director of the Refuge Management Training Academy in 1983 and still serves in that capacity.

Through his numerous professional contacts within and outside the Service, and because of his constant effort to help other professionals improve their wildlife management skills, Dick is leaving a legacy of well-trained and articulate wildlife managers that will have a significant impact on the wildlife resources of Oregon and the rest of the nation.

that day came there to learn about and buy native plants, they left knowing about the National Wildlife Refuge System and the habitat management efforts of the U.S. Fish and Wildlife Service.

In late October the refuge held a Halloween festival for local youngsters. Six hundred kids and their parents visited for a day of bobbing for apples, soap bubble blowing, face painting, games, slide shows, guest musicians and a series of tours out to a ghost town. Though the visitors didn't come to learn about salt marshes and duck population sizes, they left being very well informed about the destruction of most of San Francisco Bay's marshlands, and the resulting decrease in the diversity and abundance of local wildlife.

Kids' Day was held in November, when 500 kids and their families enjoyed bird banding, puppet shows, movies, story telling, and lots of other activities. They built bird feeders, learned about the life cycle of brine shrimp, visited the Whale Bus from the Oakland Whale Center, and joined in the fun of learning about arithmetic in nature with the Math/Science Nucleus of Fremont. And of course, they learned all about the refuge and San Francisco Bay.

The biggest event of the year was held in December, when 6,000 people came to the annual arts and crafts sale to do their Christmas shopping. The finest wildlife artists in California sold their paintings, photographs, wood carvings, jewelry, pottery and stained glass during the 2-day festival. One of the artists was Sherrie Michiko Russell, the 1986 California state duck stamp winner. There was music throughout each day, provided by school choirs and local bands, and Santa Claus circulated through the crowds and talked to all the youngsters.

Each artist donated one piece of art for a Sunday afternoon raffle, and refuge volunteers sold hot dogs, brownies, cookies, mulled cider and candy canes. At the end of the show, the refuge's cooperating association had made $4,000, which will be used to fund more nature programs during 1987.

Most of the visitors at these extravaganzas probably would not have come to the refuge, except for the recreational value of the special events. But once they arrived, they couldn't help but receive the messages that the Service is presenting to them. Interpretive panels are everywhere, and the exhibits and displays effectively present the story of the entire refuge system, migratory bird management, endangered species, wetland habitat protection, marine mammals and fishery resources. No matter why someone comes to the Refuge, that visitor leaves knowing that salt marshes have an intrinsic value, and that San Francisco Bay is an important wintering area for canvasbacks.

As the refuge interpretive program matures, more of these major events will be planned. Though it doesn't seem, at first glance, that an Astronomy Day or a Science Fair is really parallel to the refuge's conservation theme, such non-traditional activities can attract inquisitive visitors who will acquire an awareness of, if not a commitment to, habitat conservation and wildlife management.

Aransas Crane Count Tops 100

Tom Smylie, Public Affairs Officer

Recent aerial census flights over Aransas National Wildlife Refuge on the Texas Gulf Coast show a record 105 endangered whooping cranes have survived their annual migration from Canada. The number is expected to climb to 115 in the next few weeks.

In the early 1940's, there were only about 15 birds left in the wild and it was feared the species was heading for extinction. The effort to save the whooping crane began in 1937 with establishment of the Aransas refuge to protect a critical portion of the crane's habitat.

The tall white birds nest in the Wood Buffalo National Park located in Canada's Northwest Territories. Earlier this year, Service biologists and their counterparts from the Canadian Wildlife Service said they expected the record production of 20 young birds in the Canadian park to bring the total well over the century mark. Last spring, 96 birds migrated northward from Aransas.

In contrast, however, the second flock that migrates each fall from Gray's Lake National Wildlife Refuge in Idaho to the Bosque del Apache refuge near Socorro, New Mexico, had a poor nesting season. This experimental Rocky Mountain population was begun in 1975 in an attempt to establish a second wild whooping crane flock. This was done by placing eggs from captive whoopers at the Service's Patuxent Wildlife Research Center in Laurel, Maryland, into the nests of sandhill cranes at Gray's Lake. In the fall, the sandhill cranes lead the whoopers on a much shorter migration to New Mexico.

This year, 15 eggs were transferred from Canada to Gray's Lake and 11 hatched, but only 2 survived. Service biologists believe the usually high loss can be attributed to a drought in the area that allowed coyotes and foxes easy access to the nests. The total population of this Rocky Mountain population is expected to number in the high-twenties by the time the migration is over.

Bob Hines

Whooping cranes feeding on the Aransas National Wildlife Refuge in Texas.

Jim Ross, Public Affairs Officer

Retired Service Pilot Honored

Francis N. Satterlee
Public Affairs Officer
International Association of Natural Resource Pilots

Rossalius (Ross) Hanson, retired wildlife biologist and pilot with the Service, recently received the Distinguished Service Award from the International Association of Natural Resource Pilots (IANRP).

The award was presented at Hanson's home in Edina, Minnesota. Representing the IANRP at the presentation was Francis N. Satterlee, a former Minneapolis resident who now lives in Vienna, Virginia. Also present was Harvey K. Nelson, Regional Director of the Service in Twin Cities. The award was in recognition of Hansons contribution to the formation and continuance of the IANRP, of which he is a charter member and former president. The group is made up of scientist/pilots who fly for various state and federal natural resource agencies throughout the U.S. and Canada.

Hanson, a native of Wabasha, Minnesota and a 1940 graduate of the University of Minnesota, retired from the service in 1980. During his 33-year career with the agency he completed 15,000 accident-free hours of flying.

In 1975 Hanson was recognized by the Minnesota Chapter of the Wildlife Society as the "outstanding professional in the field of wildlife management for 1975," and later received the U.S. Department of the Interior Meritorious Service Citation.

Joyce Hanson

Retired Service Pilot Rossalius (Ross) Hanson, center, was the recipient of the International Association of Natural Resource Pilots (IANRP) Distinguished Service Award during ceremonies held in his Edina, Minnesota home recently. Hanson is flanked on right by Harvey K. Nelson, Regional Director of the Service in Minneapolis, Minn. Making the presentation on behalf of the IANRP, on the left, is Major Francis N. Satterlee USAF-Ret., Public Affairs Officer for the Pilot's organization.

Steve Maslowski

A red wolf at the Wild Canid Survival and Research Center in St. Louis, Missouri.

Red Wolf Returns to the Wild

On November 12, 1986, four pairs of red wolves were put into acclimation holding pens at Alligator River National Wildlife Refuge in eastern North Carolina. This was a giant step in the reintroduction project for this most endangered mammal. But the action, as important as it was and as much media attention as it got, was only one more step in a long series of events aimed at recovery of this species. The red wolf saga has been going on for more than 10 years.

One of the key elements in the red wolf story was the successful, but at the time controversial, removal of all red wolves from the wild during the early 1970's. Had that not been done at the time, the red wolf most likely would be extinct today. Curtis Carley from the Service's Albuquerque regional office and others were the center of that action. It was much like the California condor program is today. Should the Service take a chance on removing the last animals from the wild and try to save them in a captive breeding population for later release, or should nature be left to take its

Wolfgang Obst

A red wolf is captured in preparation for a cross-country trip to the Alligator River National Wildlife Refuge in North Carolina. Wolf handler John Annon from the Point Defiance Zoo staff corners the animal in its pen at the Red Wolf Captive Breeding Facility in Graham, Washington.

course? There is very little question today that the right decision was made for the red wolf.

Carley, and those helping him, went through the difficult task of trapping the remaining wolves and the even more ardous task of identifying those animals that were pure red wolves and separating them from coyote and red wolf hybrids.

Next came a successful translocation project. Carley, with the help of others, designed a plan that required not only moving the wolves from their holding pens at Graham, Washington, but also finding a suitable release site. This was found at Bulls Island on Cape Romain National Wildlife Refuge off the South Carolina coast.

Then came the task of making the local people aware of what a red wolf was and trying to dispel the "Little Red Riding Hood" syndrome. Carley and others were so successful that the people of the South Carolina Low Country not only accepted the project, they fell in love with the wolves. The news media did such a fine job of explaining the project that folks in

Don Pfitzer, Public Affairs Officer

South Carolina did not want the pair removed after 1 year as required in the translocation experiment plan.

That study provided virtually all the information on which the recent reintroduction project was based.

The Bulls Island translocation effort was followed by an attempt to introduce red wolves in the Land Between the Lakes area of Tennessee and Kentucky, managed by the Tennessee Valley Authority (TVA). The Fish and Wildlife Service, TVA, Kentucky Wildlife Resources Department, and Tennessee Wildlife Resources Agency were all deeply involved in the planning and coordination. Because of political and sociological problems, coyotes, and other complications, the project was never approved for completion. More than 3 years, between 1980 and 1984, had been spent laying the ground work, coordinating the plan, and informing the public about the project.

Then, in 1984, Warren Parker, from the Endangered Species Office in Fisheville, North Carolina, saw the newly-acquired Alligator River National Wildlife Refuge as a possible site for the next release. Finally, on November 12, 1986, after a period of extensive planning, coordination, and educational efforts, the four pairs of red wolves were placed in the acclimation pens.

As of this date, they are doing fine. They have adjusted well, show no signs of stress, and are already howling their distinctive howl. In May, if everything continues on course, they will be released from the pens to begin life on their own in the environment of Alligator River National Wildlife Refuge. The local people have accepted them and seem to be proud of the fact that this portion of the wolves' former range was still suitable for the reintroduction, the first time an animal considered extinct in the wild will have been returned to the wild in North America.

Iroquois Hosts Nesting Eagles

Barbara Donlon
Public Affairs
Ray Whittemore
Iroquois NWR
Region 5

August was, indeed, a memorable month at Iroquois National Wildlife Refuge in upstate New York! The third pair of nesting bald eagles in the area in decades, and first at Iroquois, produced their first young atop a 70-foot-tall basswood tree on a small island in the middle of a 1,300-acre fresh water impoundment.

The location of the nest enabled the refuge staff and, eventually, many of the public to observe the notable event from April incubation through May hatching, and finally, through fledging which occurred in August. The two young eagles and their parents were observed around the refuge until late November when they were seen for the last time. It's assumed that the birds have left in search of suitable winter habitat, probably in the Chesapeake Bay area. Hopefully, the adults will return in the spring to nest again, but the young eagles, now on their own, will probably settle in western New York.

The eagles provide optimism for New York's eagle restoration program, which began appropriately enough in 1976, the 200th anniversary of the founding of our country for which the eagle is the national symbol. The restoration program began at Montezuma refuge near Syracuse, New York, with the release of 15 birds over a 5-year period and today, the program has released 150 eagles throughout the state, most collected as young birds in Alaska.

The bald eagle program in New York is funded largely by public contributions through the "Return A Gift to Wildlife Program," a special line on State personal income tax forms for voluntary contributions for fish and wildlife protection and management. Using these funds, the State contributed a spotting scope and several eagle displays for a public viewing area at Iroquois headquarters. Refuge volunteers contributed many hours informing the public about the unique opportunity available to everyone for observing our country's "symbol of pride" in its natural habitat, and look forward to a repeat performance next spring of "Operation: Eagle Watch."

Ray Whittemore

This eagle's nest, visible atop the 70-foot-tall basswood tree, is located on Iroquois National Wildlife Refuge in New York State. The nest is home to the refuge's first recent pair of nesting bald eagles, which produced two eaglets in May.

Inez Connor, Public Affairs Officer

This unusual photograph of a peregrine falcon perched on an ornamental eagle head atop the Customs Tower was taken by special agent Chris Dowd, whose office is on the 20th floor of the Boston landmark.

Dowd said he just happened to hear the bird and had to go to his car to get a camera, and then buy film. Luckily, the falcon was still there on his return. No identification tag was visible but it is assumed the peregrine is one released by the State a few blocks away.

Chris Dowd

Deer Management at Great Swamp NWR—A Success Story

Janith Jones
Great Swamp NWR
Basking Ridge, New Jersey

This photograph of an area severely over browsed on the Great Swamp National Wildlife Refuge was taken in December 1970. During the last decade, the habitat has steadily improved.

Twelve years after the costly, heated legal battle over whether or not to allow deer hunting on Great Swamp NWR in New Jersey, the herd is once again healthy and living proof that sound management practices are worth fighting for.

Many Service employees remember or have heard of the 4-year court battle over the proposed deer hunt. Heavy browse damage on the refuge, destruction of gardens and ornamental plantings on adjoining landowners' property, and excessive deer-automobile collisions on and around the refuge prompted a formal research study in 1970 to document the condition of the herd and the habitat. Scientific data confirmed the poor condition of the herd, habitat destruction, adverse impacts on other species, and the need to take immediate steps to reduce the number of deer.

In December 1970, refuge personnel met with local residents and biologists from the New Jersey Division of Fish, Game and Shellfisheries to discuss the growing herd. Primary concerns, in addition to destruction of vegetation on both the refuge and private property, were impending disease and starvation in the herd if its density was not reduced quickly. The outcome of the meeting was a proposal for a refuge deer hunt.

Over $100,000 and 4 years of effort later, the first hunt took place on December 10, 1974. Within an hour, successful hunters were bringing their deer to the refuge check station for examination by wildlife biologists, a pathologist, and a veterinarian.

The examinations confirmed that the deer were diseased and underweight, and, combined with the obvious poor condition of the habitat, clearly supported the need for further herd reduction.

Since hunting resumed in 1974, there have been no known cases of starvation or disease in the Great Swamp deer herd. The habitat in the Swamp shows substantial recovery from overbrowsing, and adjoining landowners no longer experience heavy depredation in gardens or ornamental plantings.

The research study has continued since 1970. Its objectives are to determine the seasonal population of the herd; monitor its productivity and physical condition; determine home range and movements; and make recommendations for population control measures based upon indices to the herd's health and population estimates. The goal has remained constant: to maintain a healthy deer population at a level consistent with available habitat.

A trapping tagging program was initiated to monitor movements and home range, and later used to conduct an aerial mark-recapture census. Capture methods included immobilization with a dart gun, box trapping, rocket netting, and hand-netting of newborn fawns. Tagging methods included neck collars, metal ear tags, colored ear streamers and freeze branding. Life tables, constructed from research data, were used in conjunction with data from aerial censuses and reproduction to provide seasonal population estimates.

The resulting indices are now used, with information on the condition of individual deer, to estimate population size. Physical data are obtained through examination of all deer brought into the refuge check station and from road-kills from the Great Swamp Basin study area. All deer are aged and weighed, antlers are measured, and female reproductive tracts are collected.

After 12 hunting seasons, data show that there has been steady improvement in habitat and that the herd is healthy. There is no evidence of disease or winter starvation, and deer/automobile collisions have been significantly reduced.

The special hunting season remains strictly controlled by refuge personnel. Up to 600 hunters are selected randomly, and not more than 225 are allowed afield at any one time, yielding a maximum hunter density of one per 27 acres. Hunters are required to attend an orientation session and be certified with the shotgun and ammunition they use to hunt.

Anti-hunting demonstrations have decreased substantially but, on a smaller scale, are still part of the annual opening day activities. The success of the hunting program is well documented. Dramatic improvements in the quality of habitat and herd health, as well as the need to protect the general public from health hazards such as Lyme Disease, demonstrate the need for continued deer management. The hunt has been shortened from 10 to 6 days as a result of improved conditions, and the shorter period minimizes conflict with other types of public use.

Other refuge managers can point to the Great Swamp story when faced with the need for a deer hunt to protect the habitat and other wildlife populations. Properly presenting sound management practices may prevent misguided public protest and encourage more support of our programs.

Hunter Education Means Accident Reduction

Jack Hallowell, Public Affairs Officer

Recent studies show that hunter education training programs conducted by the States and supported in part with Federal funds have resulted in fewer fatalities and reduction of accidents associated with sport hunting.

According to Service Regional Director Galen Buterbaugh, the Rocky Mountain and High Plains States had the fewest fatal accidents per 100,000 hunting licenses sold in 1984 in the United States based upon data from the North American Association of Hunter Safety Coordinators (NAAHSC). States in this Region are Colorado, Wyoming, Montana, Utah, North Dakota, South Dakota, Nebraska and Kansas. The Region also had the second fewest total number of all hunting accidents.

Sheri Fetherman, Service hunter education specialist for the Region, said figures from a National Rifle Association (NRA) report showed that states with mandatory hunter education programs were most successful in reducing accidents. She said 35 states have mandatory programs, and averaged 9.3 accidents per 100,000 licenses sold. She said the 15 states with voluntary hunter education programs sustained an average 11.78 accidents per 100,000 licenses sold.

Fetherman said the NAAHSC and NRA statistics deal with accidents that occur with a firearm in the field, and not with accidents that occur in the home. She added that NAAHSC data indicated most accidents occurred among small game hunters, most accidents were with shotguns, and that most shooters involved in accidents were ages 10 to 19.

Most accidents were categorized in the NAAHSC's 1984 Hunting Accident Report as caused by "judgment errors" in which the victim was mistaken for game. Other accident areas included when the victim was out-of-sight of the shooter, when the victim was covered by a shooter who was swinging his firearm on to game, and "careless handling" of the firearm.

A large number of accidents occur when a shooter stumbles and falls, with about 17 percent of those accidents resulting in fatalities.

The NAAHSC report concluded that "the North American hunter is becoming increasingly more responsible and safe." The data for the report was provided by 48 states and five Canadian Provinces.

Hunter Ed & the Pittman-Robertson Act

Hunter education programs to reduce firearms accidents and teach outdoor ethics train more than 700,000 people each year. These programs are funded in part under the Pittman-Robertson Act, which was signed into law almost 50 years ago on September 2, 1937. The law apportions Federal firearms, ammunition, and archery equipment taxes to the states on a matching basis of up to three Federal dollars for every state dollar. It also prohibits the use of these Federal revenues for any purpose other than wildlife conservation.

The 50th anniversary of the Pittman-Robertson program, a notable milestone in wildlife conservation legislation, will be observed in 1987. The anniversary has been given special recognition by Secretary of the Interior Don Hodel.

"Many Americans are surprised to learn that hunters have been the mainstay of wildlife conservation over the last half-century," Hodel said. "Long before such terms as 'ecology' and 'environment' entered our popular vocabulary, taxes on sporting arms and ammunition—willingly supported by hunters and the firearms industry—were rescuing wildlife species and their habitats that would otherwise have disappeared."

The Pittman-Robertson Act has provided more than $1.5 billion to the 50 states for wildlife restoration since 1937, and has:

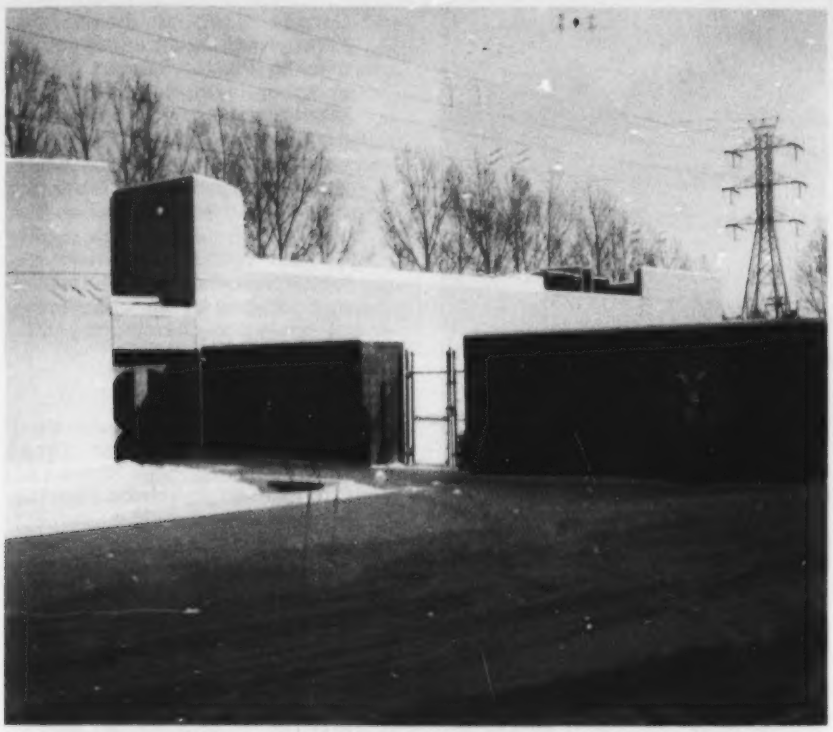
- enabled the states to purchase outright about four million acres for wildlife habitat;
- supported state leases and cooperative agreements covering an additional 40 million acres for wildlife management;
- restored populations of many birds and mammals—both game and nongame—such as the white-tailed deer, wild turkey, pronghorn antelope, beaver, black bear, giant Canada goose, desert bighorn sheep, and mountain lion;
- supported hunter education programs to reduce firearms accidents and teach outdoor ethics in all 50 states, training more than 700,000 people each year;
- supported inventories of wildlife—by species, numbr, age, and sex—to guide state wildlife agencies in setting hunting regulations, improving habitat, and spotting troubled species before they become endangered; and,
- stimulated the creation of technology necessary to carry out research.

New Hunter Education Facility in Colorado

Sheri Fetherman
Wildlife Biologist
Region 6, Denver

The student confidently raised the .22 rifle to her shoulder and carefully took aim. Gently but firmly, she squeezed the trigger. Her shot fell slightly below the elk silhouette target located 25 yards down range. The hunter education instructor suggested she try to follow through her shot, keeping the gun to her shoulder a few moments longer. Pointing the gun down range to reload as she had been taught, she prepared to try again.

This student was completing the mandatory live firing portion of the hunter education course at the new Colorado Division of Wildlife (CDOW) hunter education facility recently constructed at their headquarters in Denver. The new facility, containing both a classroom and an indoor range, provides students with a modern, comfortable location where they can complete both the class-



The new hunter education facility located at the Colorado Division of Wildlife headquarters in Denver houses an indoor shooting range for certifying hunters and for training volunteer hunter education instructors. State hunter education programs are funded in part through the Pittman-Robertson Act.

room and live firing requirements of the Colorado hunter education course.

A portion of the 25,000 hunters certified each year in Colorado will be instructed at this facility by certified volunteer hunter education instructors. The facility will also provide a location for training volunteer instructors.

The $630,000 facility was funded in part through the Federal Aid in Wildlife Restoration Act (also known as the Pittman-Robertson Act). Wildlife restoration funds are derived from an 11 percent Federal excise tax on sporting arms, ammunition and archery equipment, and a 10 percent tax on handguns. State hunter education programs receive a portion of this total each year.

The hunter education facility contains a large, airy foyer with glass display cases for housing awards and educational displays, shelves for brochures, and restrooms. The west end of the building contains a large auditorium-like classroom. Seating for approximately 200 is provided by movable desks. There is a glass-enclosed audio-visual room in the back of the classroom from which slide or film projectors, a screen, and the lights can be controlled. A raised platform allows the speaker to be seen throughout the entire classroom.

The east end of the building houses an indoor shooting range. There are 10 shooting stations with automated target transport systems that are controlled either from inside a glass-enclosed soundproof control room or at each individual station. A public address system allows the person in the control room and the shooter to talk to each other.

The range is 25 yards long and contains a 7 mph ventilation system with filters and scrubbers for eliminating lead fumes. Targets can be placed at 10, 20, and 25 yards and firearms up to .38 caliber can be used. A 100-yard big bore windless tunnel for discharging large caliber and black powder firearms will be completed in the future. The building is accessible to the handicapped.

Hunter education classes under the supervision of certified instructors receive top priority use of the facility. Due to the lack of personnel, the range is not presently open to the general public. However, the facility currently provides a convenient, up-to-date location for certifying safe, ethical, and responsible Colorado hunters.

George Sura, Public Affairs Officer

Yukon River Negotiations: Just the Beginning

Jon M. Nelson
Fisheries/Federal Assistance
Region 7
Anchorage, Alaska

"We are dealing with something vitally important here . . . we are dealing with one of North America's last big, wild river systems and the precious resources of that river." That is how John C. Davis, chief negotiator for the Canadian Delegation, opened negotiations between the United States and Canada on Yukon River Salmon in October 1985.

The words seem almost trite, hardly compelling in today's crisis-oriented world. But when one visits Ken Nukan at his fish camp 30 miles up the Porcupine and ponders his total dependence on trapping, fishing, and caribou, and when Sidney Huntington of Galena matter-of-factly declares that each day of his 70-plus years he has eaten a fish and each member of his family has, too, then the words take on flesh-and-blood form and substance.

And so it happened that the mighty Yukon and its "precious resource" would receive only passing mention in the landmark Pacific Salmon Treaty with Canada, the negotiations of which began some 14 years ago. The treaty was spurred to fruition in January 1984 by what were fast becoming perilously scarce chinook salmon stocks in Southeast Alaska, British Columbia, and the Pacific Northwest. Indeed, the state of the salmon resource there was such that the treaty could not be put off any longer while negotiators sorted out the complicated assortment of biological, social, and economic issues facing the Yukon River and its residents. Article VIII of that treaty, among other things, directs the Par-

Jo Keller

An Alaskan Native tending a fishwheel symbolizes the importance of the salmon fishery to residents of the 49th State.

ties to start right away and conclude as soon as possible a Yukon River Salmon Treaty.

Simple enough.

But how do we offer Ken Nukan reasonable assurance that he and his kinsmen will be able to rely on the salmon as a nutritional mainstay? How do we deal with the likes of Sidney Huntington's brethren and "their" salmon? How do we deal with the coastal Alaskans of the False Pass region who rely so much on these same stocks? Even more vexing perhaps is the high-seas interception of these same salmon by foreign nations .

Three times now the two delegations have faced one another across the negotiations table. Separated physically by the traditional two sword lengths for such occasions, they are divided philosphically by the 2000-mile-plus length of the Yukon. Global economics and traditional lifestyles aside, one central issue emerges: What portion of the harvestable surpluses of fall chum and chinook salmon ascending the Yukon each year to spawning grounds in Canada should Canadians be entitled to catch?

The answer seems immediately obvious. If one applies the so-called "equity principle," as the Canadian delegation wishes to do, the answer is "All of them!" But what about the years, even centuries, of traditional harvest? Each year since monitoring began, Alaskans have accounted for roughly 95 percent of the total in-river harvest of fall chum and over 90 percent of the chinook harvest. But not all of the Yukon's fall chum or chinook stocks spawn in Canada. Exactly what fraction does is debatable. No one knows for sure. Estimates by biologists on both sides of the border estimate a range of 60 percent U.S./40 percent Canada. Assuming that the split is 50-50—an assumption not supported by anyone—one could argue that Alaskans have historically harvested 80 to 90 percent of Canada's salmon.

And that's the rub.

No one has ever argued that Alaskans, in the past, intercepted fish destined for a Canadian net or fishwheel. Indeed, there always seemed to be enough fish to go around. Country of origin never seemed to matter. Until now. Galena and many other Alaskan river communities like it, once nothing more than incongruous clusters of habitation, are now established second-class towns. Canadians, likewise, point to a growing demand for the fish. They, too, have experienced an influx of new residents. Even more than that, however, is an expanding fresh and frozen fish market and a new processing/freezing plant in Dawson that has yet to operate at its 200,000 pound seasonal capacity.

The lines have been drawn. There are some important matters on which both sides agree, but the differences are many. Questions abound. Answers are scarce.

- Canada wants to include the Yukon River as an annex to the existing Pacific Salmon Treaty, complete with a Yukon Panel responsible for coordinating managment of Yukon River salmon; the U.S. prefers a separate agreement structured outside of the Treaty.

- Canada proposes a five-cycle rebuilding schedule for fall chum and a two-cycle rebuilding schedule for chinook; the U.S. favors a two-cycle schedule for chum salmon.

- Canada proposes an allocation schedule which, over time, reduces Alaska's take of Canadian-origin salmon from the current estimated 85-90 percent to 25 percent. The U.S. opposes any harvest reductions unless the "savings" accrue to Canadian escapement and not to Canadian harvest.

- Concerning the so-called "deeming principle," Canada proposes that 25 percent of Canadian-origin salmon harvested by U.S. fisherman would be deemed to be of U.S.-origin, meaning that the U.S. would "owe" or otherwise be indebted in some manner to Canada whenever U.S. fishermen harvested more than 25 percent of Canadian-origin fish. The U.S. favors an allocation to Canada of 5 percent of the *total* in-river harvest of chum salmon (summer and fall) and 9 percent of the *total* in-river harvest of chinook salmon, an allocation which it claims is more manageable simply because we do know what the total run is each year but have no way of telling what fraction is headed for Canada.

The debate is far from over. Meanwhile, Alaska's 1986 regulations for the lower Yukon will for all practical purposes eliminate commercial harvest of what is forecasted to be a bleak fall chum run. It is not clear what, if any, conservation measures Canada will take.

A joint U.S./Canada Technical Committee, one of the many positive outgrowths of the negotiations, is busy sorting through years of harvest and escapement data hoping to answer more questions than it raises. Rod Simmons of the Fairbanks Fisheries Office and Dick Marshall in the Anchorage Regional Office repre-

sent the Interior Department on that committee. Together with eight Alaska Department of Fish and Game biologists and five representatives from the Yukon Territory and the Canadian Department of Fisheries and Oceans, they are the technical gurus for both delegations. Some of the vexing questions which the committee will help answer include:

- Is there an inexpensive technique for differentiating between Canadian-origin and U.S.-origin salmon?
- What portion of the suspected high-seas interception of Western Alaska salmon are Yukon River stocks?
- What Yukon River tributaries (Canada and U.S.) support fall chum and chinook runs . . . and how large is each run?
- What precise percent of the total annual harvest of fall chum and chinook is attributable to "subsistance" in Alaska and to "Indian food" and "personal use" in Canada?
- Where are the important fall chum and chinook spawning and nursery areas?
- How crucial is it that both countries maintain the current wild status of these salmon stocks? Which areas, if any, offer opportunities for salmon enhancement?

The delegations have accomplished much in three meetings. Noteworthy is that each side has tabled a comprehensive proposal and the other side has responded. The positions are clear. The lines have been drawn. Each side is talking to the other. Differences between good friends are always the most difficult kind. Undaunted, the Joint Technical Committee is moving ahead, differences aside, to identify and coordinate research needs and management studies.

But the issue—which country is entitled to the fish—still looms.

Is this just the beginning? The likes of Sidney Huntington and Ken Nukan hold the answer. In the end, each will have to give more than either wants. That's the way it must be if Mr. Davis' "precious resource," the unique Yukon River fall chum salmon, counts for anything.

Canvasbacks Have Friends in the Service

Diana Cross
Office of Information Transfer
Ft. Collins, Colorado

From peak counts of around 20,000 to nearly 200,000 canvasbacks in a decade! Observers along the Upper Mississippi River had good reason to think that the canvasback duck population was increasing dramatically.

But populations were not increasing. Research initiated in 1972 by the Northern Prairie Wildlife Research Center showed that canvasbacks had simply shifted from their traditional fall staging areas to navigational pools of the Upper Mississippi River. Early work by Service scientists David Trauger and Jerry Serie determined the number of birds using the river as well as their origin and destination.

According to Carl Korschgen, a Northern Prairie biologist stationed at La Crosse, Wisconsin, the vast numbers of canvasbacks using the river during fall migration represent about 75 percent of the entire North American population. Peak numbers during recent fall censuses appear to average around 100,000 ducks.

Service biologists believe the ducks shifted from traditional staging areas in northern lakes because of habitat degradation and disturbance. At the same time, successional changes in the river resulted in a better food supply there, particularly in navigational pools 7 and 8 near La Crosse. With the canvasbacks concentrating so heavily in this area, it seemed important to take a critical look at that food supply.

Studies initiated in 1978 by Korschgen revealed that canvasbacks were consuming primarily winter buds of wildcelery, an aquatic plant. On one study area, canvasbacks removed 167 tons of winter buds (over 700 million) during one fall period. Further studies by John Takekawa showed that the ducks spent approximately one-fourth of each day diving for food.

Takekawa's studies have highlighted the nutritional and energetic value of wildcelery winter buds as a food supply of migrating canvasbacks. The energy value is such that canvasbacks benefit even if they only obtain one bud in every seven or eight dives. A significant amount of body weight is gained during stopovers on the river. Therefore, this staging area, which presently has an abundance of food, is an area where the birds can gain fat which may provide them with a better opportunity to survive the remainder of migration.

One potential problem, Korschgen discovered, was the impact of recreational boaters on the river. Diving ducks become very wary of outboard motor boats and will flush at a

photo courtesy of Northern Prairie Wildlife Research Center

Canvasback ducks are the subject of research studies conducted by the Northern Prairie Wildlife Research Center.

Jerome Stoudt

Canvasback hen on nest.

distance of one-half mile. Korschgen's data indicated that the birds may be flying up to on hour per day in response to these disturbances. This may interfere with their feeding and resting, and create an additional energy demand.

The Upper Mississippi River National Wildlife and Fish Refuge has used this information to develop interpretive displays, placed at each boat landing, requesting that the public refrain from boating through waterfowl concentrations.

The information obtained about the importance of wildcelery is also being used by the refuge. Currently, nearly 10,000 surface acres of wildcelery in the refuge are providing food for canvasbacks as well as food and cover for a variety of other fish and wildlife species. Plant beds appear to be stable from year to year in most areas, except in Pool 8. A major decline of wildcelery in that pool during the late 1970's resulted in a drastic reduction of canvasback use of the area. Now aware of the importance of this habitat, refuge personnel have embarked on a program of wildcelery restoration in selected areas where it has been lost.

Northern Prairie's research has important implications for management of the Upper Mississippi River National Wildlife and Fish Refuge and for canvasbacks elsewhere. Whenever possible, action must be taken to protect and increase the food supply of migrating canvasbacks, and also to provide the birds with disturbance-free time to benefit from the available food supply. Efforts also should be made by other conservation agencies to provide a variety of alternative migrational habitats in case the food supply of the Upper Mississippi River pools is lost.

Northern Prairie biologists and Region 3 managers have worked together to gain a better understanding of canvasbacks and their requirements during fall migration. These cooperative efforts, and those by others outside the Service, should result in improved survival, and thus greater numbers of this popular diving duck.

Fort Collins Sixth Graders "Take Pride"

Diana H. Cross
Office of Information Transfer
Ft. Collins, Colorado

As part of the "Take Pride in America" initiative, Region 8's Office of Information Transfer in Ft. Collins, Colorado, recently sponsored a contest at local elementary schools. Students were invited to make a poster or write an essay on the theme, "The Value of America's Fish and Wildlife Resources Found on Public Lands in Colorado."

According to Tom Cortese, coordinator of the event, the "Take Pride" campaign provided the perfect opportunity to help instill environmental ethics in students. "Perhaps because of our location, with so many public lands nearby and a rich variety of wildlife to enjoy, students exhibited a great deal of knowledge and respect for wildlife," Cortese stated. "The response to the contest was greater than we expected."

Indeed, judges had a difficult time selecting first, second, and third place winners from among the 65 essays and 151 posters submitted. Each winner received a nature book, a visit to a National Wildlife Refuge, and a certificate of appreciation signed by the Regional Director, Richard N. Smith.

The first place essay appears below. The three winning posters are now on display in Colorado Congressman Hank Brown's office.

First Place Essay

Take Pride in America
Steph Stengaard
Lopez Elementary School

I think it was a great idea that they set aside land for me and all the other millions of people that like to fish, hike, hunt, and look at the beautiful nature and the outside world.

If it wasn't for the Fish and Wildlife Service we wouldn't have ever had any more fish, birds or any kind of animal in the United States again. It really helps to have to buy your own hunting and fishing license and have to send your name in and get drawn for a hunting license.

I sometimes think it's a shame how people treat the land that someone set aside for people to go and enjoy the outdoors. Some people fish to provide very good meat for their families. People can hunt and have fun all at the same time. People that litter and disobey state and fish and wildlife laws should be caught for destroying the beautiful lands that other pepie like so very much and use a lot.

There are so many people who use those lands for picnics, parties, meetings, and just for the scenic view and the beauty. There are also lots of people who have never even been there. I'm sure they can't wait till they get to come and see the beautiful Colorado lands just for them and everyone in the United States and even from other countries.

So come and see the beautiful lands of Colorado!

For more information about these and other subjects, contact Diana Cross at Research and Development's Office of Information Transfer in Ft. Collins, Colorado, at FTS 323-5451 or (303) 493-8401.

Emergency Wetlands Resources Act Passed

Recognizing the importance of vital wetland habitat, the last session of Congress passed the Emergency Wetlands Reources Act of 1986. Signed into law by President Reagan on November 10, 1986, the Act is aimed at encouraging cooperative management efforts on and increased acquisition of wetlands.

Service Director Frank Dunkle praised passage of the Act, saying, "This important piece of legislation will play an integral role in the Service's efforts to protect, enhance, and manage significant areas of wetland habitat and the migratory waterfowl and other wildlife species dependent on them. This action will also play an important role in the development of projects and efforts currently being formulated as part of the North American Waterfowl Plan."

The Act extends the Wetlands Loan Act for 2 years and excuses repayment. If this had not been done the Service would have been required to begin using 75 percent of annual Duck Stamp receipts to repay the $500 million advanced by Congress for funding wetlands acquisition under the Wetlands Loan Act.

The new law also authorizes entrance fees for national wildlife refuges meeting certain criteria, with 30 percent of the proceeds going towards refuge operation and maintenance. Seventy percent will be placed in the Migratory Bird Conservation Fund for additional acquisition projects.

Another provision calls for a gradual increase in the price of a Duck Stamp. For 1987 and 1988, the price will increase from its present $7.50 to $10. For 1989 and 1990, the Duck Stamp will sell for $12.50. The price will again increase to $15.00 for 1991 and subsequent years. The Act also provides for an amount equal to the total of import duties collected on arms and ammunition to be paid into the Migratory Bird Conservation Fund on a quarterly basis.

In addition to these specific actions, the Act also calls for establishment of a national wetlands priority conservation plan outlining high priority areas to be considered for acquisition. It also provides for continu-

cont. on p. 19

Mapping the Nation's Wetlands

Tom Dahl
National Wetlands Inventory
Washington Office

Despite increased recognition of the environmental importance of wetlands, the loss of this resource continues at an alarming rate. Of the original 215 million acres of wetlands which existed in the lower 48 States, less than 99 million acres (46 percent) remain, and estimated annual losses exceed 450,000 acres.

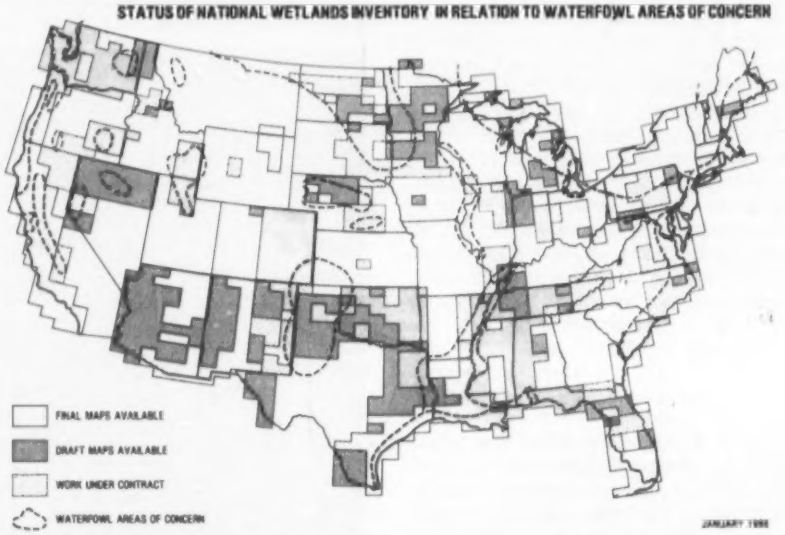
Because wetland ecosystems play such a critical role in maintaining fisn and wildlife productivity and diversity and, in light of continued habitat losses, the Service has undertaken the job of inventorying America's wetlands and keeping track of trends in wetland gains and losses.

The National Wetlands Inventory (NWI) is that part of the Fish and Wildlife Service which is responsible for identifying, mapping, classifying and reporting on the status of our Nation's wetlands. The objective of the NWI is to develop and disseminate sound information on the characteristics of wetlands and produce topical wetland maps that accurately represent these valuable resources.

The wetland classification system used by the NWI is a hierarchical one providing several levels of detail based on the amount of information known about a particular wetland. The classification defines the limits of wetlands according to ecological characteristics and not according to administrative or regulatory programs. Three key attributes define the term "wetland": (1) the presence of wetland plants (hydrophytes) or (2) the presence of wet soils (hydric soils) or (3) soil saturation or flooding.

Setting Priorities for Mapping

Mapping priorities are based principally on the needs of the Service and other Federal and state agencies. Priority areas include the coastal zone, including the Great Lakes, the prairie wetlands, playas; and the floodplains of major rivers. Each year current priorities are analyzed. Things considered in directing wetland mapping efforts include: (1) areas used by migratory waterfowl, endangered species, and other high-interest species; (2) spawning and rearing areas used by anadromous fish and estuarine-dependent fisheries; (3) National Wildlife Refuges and other fish and wildlife resource management areas; (4) areas where a sound wetland information base would reduce conflicts concerning Section 10/404 permits or federally-sponsored water resource and energy development projects; (5) locations where states or other agencies have active programs under the Clean Water Act or state legislated mandates; and (6) areas where


STATUS OF NATIONAL WETLANDS INVENTORY IN RELATION TO WATERFOWL AREAS OF CONCERN
FINAL MAPS AVAILABLE
DRAFT MAPS AVAILABLE
WORK UNDER CONTRACT
WATERFOWL AREAS OF CONCERN

Copies of National Wetlands Inventory maps can be obtained by calling the toll-free number 1-800-USA-MAPS.

wetland information would complement other planning activities.

Wetlands are being mapped primarily by the use of high altitude aerial photography. Good quality and resolution photos taken in either the spring (April-May) or fall (October-November) when trees have no leaves are preferred.

To ensure that the maps are as accurate as possible, the Service conducts regional and national quality control reviews of the wetland delineations and classifications on the aerial photography. A small percentage of the wetlands are ground-truthed and cartographic quality control steps are built into the process.

The result of this work is a large-scale (1:24,000) "draft" wetland map which shows the location, shape and characteristics of the wetlands and deepwater habitats superimposed on a U.S. Geological Survey topographic base map. These maps are distributed for review and comment to interested Federal, state, local and private organizations and to anyone who may have an opportunity to field-check the wetland delineations. These users can make field observations and provide comments or suggestions before the final wetland map is produced.

The multi-agency input which the NWI receives in reviewing the draft maps contributes significantly to the quality and overall acceptance of the wetland maps. Accuracy is important since the maps are used by local, state and Federal agencies as well as by private industry and organizations for many purposes including comprehensive resource management plans, environmental impact assessments, permit reviews, facility and corridor siting, oil spill contingency plans, natural resource inventories, and wildlife surveys.

To date, approximately 10,000 detailed wetland maps covering 40 percent of the lower 48 states and 10 percent of Alaska have been produced and distributed. The Service along with the U.S. Geological Survey and 17 state distribution centers are disseminating the maps for use.

Wetland Trend Analysis

As part of the NWI effort to monitor wetland trends, a statistical analysis was undertaken to develop national estimates on the status of U.S. wetlands and deepwater habitats (in the lower 48 States) from the mid-1950's to the mid-1970's. The study was designed and conducted

M. C. Hammond

A typical prairie pothole rimmed by aspen and farm land on the Lostwood National Wildlife Refuge in North Dakota.

George C. Moore

Expansive stretches of salt marsh near the mouth of the Satilla River on coastal Georgia.

Ted Borg, Georgia Game and Fish

A stand of bottomland hardwood forest near the Alcovy River in Georgia. This habitat type supports a diversity of wildlife along waterways in the Southeast.

Rex Gary Schmidt

An aerial view of coastal wetlands encompassed by the Blackwater National Wildlife Refuge in Maryland.

by an interagency group of statisticians, with data acquisition and generation provided by the NWI.

The findings of this study show that wetlands now represent only about 5 percent of the total land surface of the United States. Annual wetlands losses averaged 458,000 acres: 440,000 acres of inland wetlands and 18,000 acres of estuarine wetlands. This annual loss equals an area about half the size of the state of Rhode Island.

The trend analysis study found 19 states with significant net losses in wetlands: (1) in the Northeast—Delaware, Maryland, and New Jersey; (2) in the Midwest—Illinois, North Dakota, South Dakota, Minnesota, Nebraska and Wisconsin; (3) in the Southeast—all States, except Virginia, Tennessee and Kentucky; (4) Texas in the Southwest; and (5) California on the West Coast. The report discusses the causes of wetland conversions and identifies which wetlands of the country are in the greatest jeopardy.

Future Plans

The NWI is proceeding to map the Nation's wetlands at a rate of 5 percent a year for the lower 48 States and 2 percent a year for Alaska. In addition to wetland maps, several other types of information are being produced to supplement the inventory effort. These include lists of hydric soils and hydrophitic vegetation, wetland status reports, and computerized wetland value databases. An update of the wetlands status and trends study is also scheduled to be completed by the late 1980's.

New Book Examines Global Wetlands

The importance of wetlands on an international scale is the topic of a new and comprehensive volume published by Earthscan, an editorially independent news and information service on global environment and development issues.

Within its pages, author and geography lecturer Dr. Edward Maltby examines the differing types of wetlands found around the world, their importance in the global environment, and the threats they presently face. The volume also addresses itself to the inextricable relationship between people and wetlands, and continues with discussion of the charcteristics of various wetlands types.

A considerable amount of its content concerns the importance of wetlands to wildlife and wetlands management. Entitled Waterlogged Wealth: Why Waste the World's Wet Places?, the work is certainly readable and offers a selection of photographs from around the world portraying wetland types, values, and what is happening to them.

The volume was produced with the cooperation and financial assistance of the World Wildlife Fund and the International Union for Conservation of Nature and Natural Resources. Ordering information can be obtained from: Earthscan, 1717 Massachusetts Ave. N.W. Suite 302, Washington, D.C. 20036

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ance of the Service's National Wetlands Inventory project and provides a schedule for when inventory maps of major areas should be completed. High priority areas include the entire coastal zone of the United States, the floodplains of major rivers, and the Prairie Pothole region.

The law provides that reports concerning the status of wetlands are to be submitted to Congress by the Secretary of the Interior, after consultation with the Secretary of Agriculture. These reports will include information on the factors responsible for wetlands destruction or degredation, analyses of Federal expenditures related to wetlands, trends or patterns in ownership, and other relevant topics.

"Good conservation is good business . . . and the profits include prime wildlife habitat"

Frank Dunkle
Director, U.S. Fish and Wildlife Service

50 YEARS RESTORING AMERICA'S WILDLIFE 1937-1987

"It's been that way for fifty years. Since 1937 federal excise taxes on sporting arms, ammunition and, later on, archery equipment have been helping state wildlife agencies successfully save wildlands and restore deer, bear, turkey and a host of other species as well. The Pittman-Robertson Federal Aid in Wildlife Restoration Act is living proof that sportsmen and the shooting sports industry are committed to wildlife conservation.

To find out more about this important program and how it benefits you, sportsmen and state wildlife agencies, stop by our booth".

Frank Dunkle

This public service message is one of a number of informational items being developed as part of the 50th anniversary of the Pittman-Robertson or Federal Aid in Wildlife Restoration Act passed in 1937. It will appear first in the Shooting, Hunting and Outdoor Trade (SHOT) Show program and directory. This year's show, to be held in New Orleans, Lousiana during January, is expected to draw over 25,000 representatives of manufacturers, dealers, and others associated with the outdoor industry.

Service Assisted Film Wins Award

"Land of the Tiger," a magnificent documentary capturing on film for the first time the daily life of the elusive and endangered Indian tiger, recently won Emmy awards for cinematography and sound in the 1985 National News and Documentary Competition sponsored by the National Academy of Television Arts and Sciences.

Service personnel in the Office of International Affairs assisted producers Belinda Wright and Stanley Breeden by arranging a portion of the logistics involved in the production and facilitating transportation of the film to and from India and the United States during the two and one-half years it took to complete the project.

The Service's relationship with Wright and Breeden goes back to 1979 when the Office of International Affairs, through its Special Foreign Currency Program in India, commissioned them to produce a film on the Keoladeo National Park of Bharaptur. The result was an award-winning production "Birds of the Indian Monsoon" which was distributed throughout the world and is still shown daily in the visitor center at Keoladeo Park. This film subsequently sparked the interest of WQED-Pittsburgh in supporting Wright and Breeden's film on the Indian tiger, which eventually led to the production of "Land of the Tiger." The Emmy award winner was sponsored by the National Geographic Society and WQED-Pittsburgh, with additional support by Gulf Oil Corporation, now a part of Chevron.

"Birds of the Indian Monsoon" is available in 16mm film through the Service's regional film libraries. "Land of the Tiger" should be available in early 1987.

FISH AND WILDLIFE NEWS

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